

From: [Hedren, Patrick \(GE Corporate\)](#)
To: [LNGStudy](#)
Subject: GE Oil & Gas Comments on 2012 LNG Export NERA Study
Date: Thursday, January 24, 2013 1:53:58 PM
Attachments: [GE Oil and Gas Comment Letter 2012 LNG Export Study.pdf](#)
[GE Oil and Gas Comment Letter Cover Sheet.pdf](#)

To Whom It May Concern:

I am filing the attached comment letter on behalf of Daniel C. Heintzelman, President & CEO of GE Oil & Gas. The comment letter is signed by Mr. Heintzelman. I am an authorized representative of The General Electric Company and GE Oil & Gas for purposes of filing this comment letter on Mr. Heintzelman's behalf.

Attached please find a cover sheet indicating the same as above, as well as a PDF copy of the comment letter itself. Please do not hesitate to contact me with any questions or concerns. My contact information is in my email signature below.

Yours truly,

Patrick D. Hedren
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The Honorable Steven Chu
Secretary
Department of Energy (FE-34)
Office of Natural Gas Regulatory Activities
Office of Fossil Fuels
Forrestal Building Room 3E-042
1000 Independence Avenue SW
Washington, DC 20585

RE: Request for Comments on 2012 LNG Export Study
77 Fed. Reg. 73627 (December 11, 2012)

Dear Mr. Secretary:

I affirm that I am filing the attached comment letter, signed by Daniel C. Heintzelman, President & CEO of GE Oil & Gas, on Mr. Heintzelman's behalf. I am an authorized representative of The General Electric Company and GE Oil & Gas for purposes of filing this comment.

Sincerely,

A handwritten signature in blue ink, appearing to read 'P. D. Hedren', with a long horizontal flourish extending to the right.

Patrick Hedren

enc.



GE Oil & Gas

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The Honorable Steven Chu
Secretary
Department of Energy (FE-34)
Office of Natural Gas Regulatory Activities
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RE: Request for Comments on 2012 LNG Export Study
77 Fed. Reg. 73627 (December 11, 2012)

January 24, 2013

Dear Mr. Secretary:

I am writing on behalf of the General Electric Company (GE) to comment on the recent study by NERA Economic Consulting, *Macroeconomic Impacts of Increased LNG Exports from the United States* (December, 2012). This study supplements an earlier study on the issue conducted by the Energy Information Administration (EIA), *Effects of Increased Natural Gas Exports on Domestic Energy Markets* (January, 2012).

GE appreciates the opportunity to contribute to the national dialogue on this important issue. As a manufacturer of equipment and provider of services directly related to the extraction, production, delivery and use of natural gas, GE has significant expertise and interests in issues relating to exports of liquefied natural gas (LNG) from the United States:

- GE Power and Water is the world's largest manufacturer of advanced and efficient gas turbines, for use in power generation and industrial applications, and is also a manufacturer of water treatment technologies with direct application to shale gas operations.
- GE Oil & Gas is a world leader in advanced technology equipment and services for all segments of the oil and gas industry, from drilling and production, LNG, pipelines and storage to industrial power generation, refining and petrochemicals. GE Oil & Gas also provides pipeline integrity solutions, including inspection and data management, and designs and manufactures wire-line and drilling measurement solutions for the oilfield services segment.
- GE Energy Management provides leading technologies for the delivery, management, conversion and optimization of electrical power across multiple energy intensive industries.





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Section 3 of the Natural Gas Act, 15 U.S.C. 717b, prohibits exports of natural gas from the United States unless the Secretary of Energy finds that the export of domestically produced natural gas would be in the "public interest." If the proposed recipient country for the exported natural gas has a free trade agreement with the United States, such exports are deemed to be in the public interest. However, if a nation does not have a free trade agreement with the United States, the Secretary must make a finding that the proposed exports to such country are in the "public interest." Importantly, Section 3(a) creates a rebuttable presumption favoring approval of any export application, as the statute requires the Secretary to grant any such request "unless after opportunity for hearing, [he or she] finds that the proposed exportation ... will not be consistent with the public interest" (emphasis added). See Order No 2961, Sabine Pass Liquefaction, LLC, FE Docket No 10-111, at page 28.

DOE commissioned the NERA study to supplement the EIA study and to help DOE define and assess the potential economic impacts of LNG exports so that the department could better make the required "public interest" determination under Section 3 of the Natural Gas Act. The NERA study analyzes economic impacts across a broad range of scenarios, taking into account global market conditions, the costs of producing natural gas in the United States, and price impacts of LNG exports on natural gas prices in the United States. The study concludes that the United States will be a net economic beneficiary from allowing LNG exports across all scenarios, with net benefits increasing as exports levels rise. Accordingly, the study supports a finding that LNG exports are in the "public interest" and should be allowed.

NERA's findings and conclusions are confirmed and supported by numerous additional independent studies including: Charles Ebinger et.al., *Liquid Markets: Assessing the case for U.S. Exports of Liquefied Natural Gas*, Brookings Institution (May, 2012) (Brookings); Michael Levi, *A Strategy for U.S. Natural Gas Exports*, The Hamilton Project, Brookings Institution (June, 2012) (Levi); Kenneth B. Medlock III, Ph.D., *U.S. LNG Exports: Truth and Consequences*, Energy Forum at the James A. Baker Institute for Public Policy, Rice University (August 10, 2012) (Medlock); Deloitte, *Exploring the American Renaissance: Global impacts of LNG exports from the United States* (October 12, 2012) (Deloitte).

All these studies find net economic benefit to the U.S. from LNG exports, while forecasting minimal negative impact on the U.S. domestic natural gas price:

- Brookings: "U.S. LNG exports are likely to have modest upward impact on domestic prices, and limited impact on the competitiveness of U.S. industry and job creation" and "[t]he nature of the LNG sector, both costs associated with producing, process, and shipping the gas, and the global market in which it will compete, will place upper bounds on the amount of LNG that will be economic to export" (at page vi). "Efforts to intervene in the market by policy makers are likely to result in subsidies to consumers at the expense of producers and to lead to unintended consequences," and such efforts to intervene in the market "are also likely to weaken the position of the United States as a supporter of a global trading system characterized by the free flow of goods and capital" (at page vii).



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- Levi: “For a full six billion cubic feet a day of exports ... the estimated surplus for the U.S. economy would be \$2.7 billion to \$3.2 billion each year. The gains from selling gas overseas rather than at home would be approximately \$700 million to \$1 billion; the gains from new gas production would be roughly \$2.3 billion to \$2.8 billion; and the losses from lower domestic consumption would be approximately \$300 million to \$500 million. The precise numbers here depend on the sources of exported gas (displaced consumption or increased production), but the fact that the net economic impact is positive does not” (at page 14).
- Medlock: “[T]he more salient question for U.S. policymakers regards the U.S. price response to U.S. LNG exports. This question is best answered in understanding the elasticity of the domestic supply curve. In particular, we estimate that domestic elasticity of supply is roughly 1.52 between a price of \$4 and \$6 per [million cubic feet (mcf)], which represents a five-fold increase since the emergence of shale gas. In other words, a one percent increase in price will result in a one-and-a-half percent increase in domestic production. This means that the export of LNG in any reasonable volume from the U.S. should not have a significant impact on price at the margin. Rather, the analysis herein indicates that international market response will ultimately limit the amount of LNG that the U.S. exports as matter of commercial rationing. Finally, even with exports, the price in the U.S. will not likely increase dramatically. While the projected price is above today’s price this reflects a long-run sustainable price in line with the marginal cost of supply, not the impact of LNG exports. The marginal cost of supply is above the current price, as is evidenced by an increased number of producers ramping down their domestic rig activities, so the price should be expected to rise before LNG exports ever eventuate. Our own simulations indicate a long-run equilibrium price in the \$4 to \$6 per mcf range is likely for many years to come” (at page 33).
- Deloitte: Two key findings of this study are: 1) “Prices are projected to decrease fairly significantly in regions importing U.S. LNG, but only marginally increase in the U.S.” with the price of “[t]he projected increase of average U.S. prices from 2016 to 2030 [to be] about \$0.15/MMBtu;” and 2) “U.S. LNG exports are projected to narrow the price difference between the U.S. and export markets and hence, the market will likely limit the volume of economically viable U.S. LNG exports” with the “spread projected ... to be reduced by \$0.84/MMBtu if 6 [billion cubic feet/day] of exports are sent to Europe under the business-as-usual scenario (\$0.15/MMBtu average increase in the U.S. price and \$0.69/MMBtu decrease in Europe)” (at page 2).

Based on the amount of exports that can reasonably be expected (between 4 to 6 Bcf per day by 2035 according the consensus of public studies), GE agrees that the long-term equilibrium price for natural gas in the U.S would be “\$4 to \$6 [real 2010 dollars] per mcf for many years to come,” as stated by Medlock at 33. This price range is the critical reason that U.S. manufacturing and power producers will not be significantly affected by allowing LNG exports. It assures sufficient continued development of natural gas supplies, while also allowing continued support for the manufacturing



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renaissance and cleaner power revolution in the United States that was jump started by the artificially low marginal natural gas price of the last several years (as also noted by Medlock at 33).

In considering whether LNG exports are in the “public interest,” we would urge the Secretary to bear in mind the significant benefits that will accrue to the United States economy from allowing LNG exports:

- Expanding the demand for U.S.-produced natural gas will create significant numbers of sustainable, high-paying jobs in the United States in a variety of industries, including:
 - natural gas extraction and development, including installation and servicing of gas field equipment,
 - manufacture of advanced-technology gas turbines,
 - construction of LNG terminals, pipelines, and other facilities supporting LNG production and exports, and
 - other manufacturing sectors, including steel and cement;
- Encouraging exports will improve the U.S. balance of trade, not only because of the LNG exports themselves, but also by providing new opportunities to export other U.S. goods and services (including but not limited to gas-based power generation equipment and services), demand for which will be generated by LNG supply;
- By providing competitively-priced energy inputs, LNG exports will contribute to economic growth in the developed and developing worlds, increasing demand for U.S. exports, as well as reducing the potential that foreign producers can use energy supplies as a tool of foreign policy adverse to U.S. interests; and
- By increasing demand, it will support additional exploration, development, and production of U.S. shale gas, which should benefit U.S. consumers.

Furthermore, competitively-priced LNG exports will allow global energy producers to shift away from more carbon intensive fuels for electricity generation, with substantial reductions in carbon emissions and other pollutants and further opportunities for U.S exports of cleaner energy technologies.

Conversely, *declining* to approve exports of natural gas would be squarely at odds with the United States’ longstanding policy and international trade norms disfavoring export restraints (see GATT, Article XI). Indeed, the United States has been at the vanguard of those *challenging* such restraints globally. (See US/EU/Mexico Challenge to Chinese Export Restraints on Raw Materials - WTO DS 394, 395, 398 (successfully challenging China’s export restraints on certain raw materials); US Challenge to Chinese Export Restraints on Rare Earths (currently pending)). As United States Trade Representative Ron Kirk commented when launching the *Rare Earths* case: “[Export restraints] result in massive distortions and harmful disruptions in supply chains for these materials throughout the global marketplace” (Press Release, *United States Challenges China’s Export Restraints on Rare Earths* (March 13, 2012)). For the United States to now adopt such restrictions itself would fundamentally



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undermine its own international trade policy, which has served to preserve critical access to raw materials globally.

GE supports free markets and free trade. As a global company, we have witnessed firsthand the economic vitality generated when local workers, local industry, and local resources are unleashed to compete in world markets. Accordingly, the Secretary should approve all credible applications for LNG exports and let market forces determine which facilities will be built and the volume of LNG to be exported.

As recognized by the studies quoted above (*see e.g.*, Medlock at pages 23-25), the opportunity for the U.S. to secure the economic benefits of LNG exports is time sensitive, not open-ended. The NERA Study and others we have cited are clear on the point that U.S. LNG exports will compete in global markets. Alternative LNG supplies from the Middle East, Africa, Russia, and Australia and perhaps from new international shale gas discoveries will increasingly factor into the global market. Furthermore, the long-run durability of the historic linkage of natural gas prices to oil prices is uncertain. There is increasing evidence that global natural gas prices will be determined independently of oil prices as new conventional and shale gas discoveries come on-line in the global market place. *See Deloitte at page 2; Levi at page 9.*

For these reasons, LNG export applications that will maximize the time limited potential for economic benefit to the United States should be prioritized for consideration and approval. To assure this result, the Secretary should establish and use criteria designed to support those applications most likely to move forward quickly, rather than making decisions based solely on the order of filing as DOE has proposed. Therefore, we believe that applications that meet the following criteria should be given priority:

- firm customer commitments to buy U.S. LNG;
- firm commitments for project financing and construction contracts for the export facilities;
- the most complete documentation and supporting studies necessary for regulatory approval;
- applicants with significant experience in LNG markets; and
- applications to countries which afford U.S. manufacturers ready reciprocal access to their markets for natural resources and manufactured goods.

Such an approach will allow the United States to maximize the net benefits of exports while this opportunity exists.

America is a global leader in natural gas technology. GE is the leader in natural gas combined cycle equipment and other technologies for producing electricity using natural gas and other fuels, including renewable resources. Most of these products and technologies are built in the United States. U.S. companies developed the technologies and methods that have allowed access—sustainably—to extraordinary quantities of shale gas. The United States already has realized



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significant benefits from the increased use of these abundant natural gas supplies. We have created new industries, stimulated a renaissance in domestic manufacturing, and lowered emissions of carbon and other harmful pollutants as natural gas has become a primary energy source.

In summary, DOE should promptly approve the pending applications for LNG exports with preference in consideration and approval given to those with the best chance to move forward quickly. This will allow the United States to capture the full economic benefits of this opportunity, and to capitalize on our U.S. leadership in natural gas technologies.

We thank you for your consideration of our views.

Sincerely,

A handwritten signature in black ink, appearing to read 'Dan Heintzelman', with a long, sweeping flourish extending to the right.

Dan Heintzelman,