NATIONAL ASSOCIATION OF Manufacturers

Leading Innovation. Creating Opportunity. Pursuing Progress.

Testimony

of Ross Eisenberg
Vice President
Energy and Resources Policy
National Association of Manufacturers

before the Senate Committee on Energy and Natural Resources

on "Opportunities and Challenges Associated with America's Natural Gas Resources"

February 12, 2013

TESTIMONY OF ROSS EISENBERG

BEFORE THE SENATE COMMITTEE ON ENERGY AND NATURAL RESOURCES

Hearing on: *"Opportunities and Challenges Associated with America's Natural Gas Resources"*

FEBRUARY 12, 2013

Good morning, Chairman Wyden, Ranking Member Murkowski and members of the Senate Committee on Energy and Natural Resources. My name is Ross Eisenberg, and I am vice president of energy and resources policy at the National Association of Manufacturers (NAM). I am pleased to share the NAM's views on the importance of America's natural gas resources and the vital role they can play for manufacturing, jobs and the economy.

The NAM is the nation's largest industrial trade association, representing nearly 12,000 small, medium and large manufacturers in every industrial sector and in all 50 states. Manufacturers are major energy consumers, using one-third of the energy consumed in the United States. For manufacturers, natural gas is a critical component of an "all-of-the-above" energy strategy that embraces all forms of domestic energy production, including oil, gas, coal, nuclear, energy efficiency, alternative fuels and renewable energy sources.

The United States has a mix of energy resources and innovative technologies unmatched by any other nation in the world. The United States is the "Saudi Arabia of coal" and has for years relied on its dominant coal reserves

for baseload power generation; more than 100 nuclear power plants cleanly and efficiently produce a substantial portion of the nation's electricity; renewable sources are growing quickly and diversifying the nation's energy portfolio; and advances in energy efficiency continue to cut manufacturers' energy costs. Most recently, technological breakthroughs have made vast domestic deposits of oil and gas cheaply and easily accessible, offshore and onshore. What was once a potential weakness has become a major strength for manufacturers.

Natural Gas: Fueling Growth in the Manufacturing Sector

The natural gas boom has provided major opportunities for manufacturers across the supply chain. Upstream, manufacturers design and construct drilling facilities; supply machinery and materials, such as cement and steel for hydraulic fracturing and well completion; and perform a wide range of support activities and services for the natural gas extraction process. Midstream, manufacturers provide needed infrastructure, such as pipelines, compressor stations, storage facilities and processing facilities. And downstream, the possibilities—from chemicals to windows to toys to electricity—are truly endless.

The natural gas manufacturing supply chain extends even further. All of this new activity will require roads and bridges, which, in turn, requires concrete, brick, gravel and steel. Drilling sites will need vehicles, fuel and significant water supplies—which will need to be supplied, transported and treated. Site employees will need uniforms, and those uniforms will need to be cleaned and maintained. The list goes on and on.

As more natural gas is recovered, domestic manufacturers gain a substantial cost benefit relative to their international competitors. Thanks to newfound supply and price stability, manufacturers in the United States enjoy natural gas prices considerably lower than in China, India, Brazil, Japan and the United Kingdom.[1] This is a very important point, since the NAM estimates that due to domestic tax, tort and regulatory policies, it is 20 percent more expensive to manufacture in the United States than in any of its nine largest trading partners—and that excludes the cost of labor. Manufacturers in the United States enjoy a slight competitive advantage regarding energy, and with the right policies, this advantage can grow.

In December 2011, PricewaterhouseCoopers (PwC), with support from the NAM, released the report *Shale Gas: A renaissance in US manufacturing?*[2] PwC's study examined what a growing shale gas industry could truly mean for manufacturing job creation in the United States. The results are impressive: PwC found that full-scale and robust development of U.S. shale gas plays could result in 1 million new manufacturing jobs by 2025. In addition, lower feedstock and energy costs could help manufacturers in the United States reduce natural gas expenses by as much as $11.6 billion annually in that same time frame. Chemical manufacturers had been the largest beneficiaries of this new abundance of natural gas, owing primarily to less expensive ethane, a natural gas liquid derived from shale gas. PwC identified Bayer Corporation, Chevron Phillips Chemical Company, Formosa Plastics Corporation and Westlake

[1] "Shale Gas Will Fuel a U.S. Manufacturing Boom," *MIT Technology Review*, Jan. 9, 2013, available at http://www.technologyreview.com/news/509291/shale-gas-will-fuel-a-us-manufacturing-boom/.
[2] Available at http://www.pwc.com/us/en/industrial-products/publications/shale-gas.jhtml.

Chemical Corporation as companies taking early advantage of the shale gas boom.

PwC found that the benefits of shale gas for manufacturers were not limited to the major natural gas users; the benefits extended throughout the supply chain. According to PwC, companies that sell goods, such as metal tubular products and drilling and power equipment, were likely to experience near-term growth in sales as domestic natural gas production rates increased. PwC identified projects by U.S. Steel and Vallourec Ohio intended to supply steel pipe and related materials for shale gas extraction activities. These higher production levels would also yield benefits higher in the value chain, such as manufacturers of components used in drilling equipment. Overall, PwC found that 17 chemical, metal and industrial manufacturers commented in SEC filings in 2011 that shale gas development drove demands for their products, compared to none in 2008.

In the 13 months that have passed since PwC released its study, the impact of new supplies of natural gas on manufacturing has become even more pronounced. Nucor embarked on plans to develop a $750 million iron facility in Louisiana and announced a $3 billion joint venture with Canadian oil and gas producer Encana for 20 years of access to its natural gas wells.[3] Mitsubishi announced plans to build an acrylic-resin processing plant adjacent to a newly

[3] "Encana, Nucor report joint Piceance basin gas drilling program," *Oil & Gas Journal*, Nov. 9, 2012, available at http://www.ogj.com/articles/2012/11/encana-nucor-report-joint-piceance-basin-gas-drilling-program.html.

constructed ethylene plant.[4] Fertilizer manufacturer CF Industries announced that it will spend $2.1 billion to expand its fertilizer manufacturing operations.[5] Formosa Plastics Corporation increased the size of its Texas ethylene plant included in the 2011 PwC report.[6] Even foreign manufacturers are now seeking to build operations in the United States. Austrian steel manufacturer Voestalpine AG announced in late 2012 it plans to build a $661 million steel factory in the United States.[7] South African energy company Sasol announced plans to construct America's first commercial gas-to-liquids plant in Louisiana, an $11 billion–$14 billion venture.[8] Egyptian fertilizer manufacturer Orascom Construction Industries plans to build a $1.4 billion nitrogen fertilizer production plant in Wever, Iowa.[9] Canadian methanol producer Methanex announced in 2012 that it will dismantle a methanol plant in Chile and move it to Ascension Parish, Louisiana.[10] BlueScope Steel Limited, an Australian company, is building

[4] "Mitsubishi Chemical to build $710 million U.S. plant, eyes shale gas cost savings," *Reuters*, Dec. 23, 2012, available at http://www.reuters.com/article/2012/12/23/japan-usa-mitsubishichemical-idUSL4N09X05Z20121223.
[5] "The new boom: Shale gas fueling an American industrial revival," *The Washington Post*, Nov. 14, 2012, available at http://articles.washingtonpost.com/2012-11-14/business/35506130_1_natural-gas-shale-cf-industries.
[6] "Formosa Plastics U.S.A. Will Invest US$1.7 B. in Expansion," *CENS*, Dec. 14, 2012, available at http://cens.com/cens/html/en/news/news_inner_42344.html.
[7] "Shale-Gas Revolution Spurs Wave of New U.S. Steel Plants," *Bloomberg*, Dec. 31, 2012, available at http://www.bloomberg.com/news/2012-12-31/shale-gas-revolution-spurs-wave-of-new-u-s-steel-plants-energy.html.
[8] "Sasol Betting Big on Gas-to-Liquid Plant in U.S.," *The New York Times*, Dec. 17, 2012, available at http://www.nytimes.com/2012/12/18/business/energy-environment/sasol-betting-big-on-gas-to-liquid-plant-in-us.html?pagewanted=all&_r=0.
[9] "Egyptian Bets $1.4 Billion on Natural Gas—In Iowa," *The Wall Street Journal*, Sept. 5, 2012, available at http://online.wsj.com/article/SB10000872396390443589304577633932086598096.html.
[10] "The new boom: Shale gas fueling an American industrial revival," *The Washington Post*, Nov. 14, 2012, available at http://articles.washingtonpost.com/2012-11-14/business/35506130_1_natural-gas-shale-cf-industries.

a steel factory in Ohio in partnership with U.S. manufacturer Cargill.[11] And Indian manufacturer Essar Global Limited is planning a steel facility for Minnesota.[12]

Last June, a report by independent global energy research firm IHS CERA predicted that the share of U.S. natural gas produced from unconventional sources will reach 67 percent by 2015 and 79 percent by 2035.[13] This would lead to $3.2 trillion in investments to develop the resource and 1.4 million new jobs (on top of the 1 million already created by the industry). These economic benefits are not limited to gas-producing states; non-gas-producing states contributed 18 percent of the total U.S. employment generated by unconventional gas activity in 2010. IHS CERA concluded that increased unconventional gas activity will contribute to capital investment, job opportunities, economic growth, government revenue and lower prices across the country.

Opportunities and Challenges for Natural Gas Development

This newfound natural gas renaissance has brought with it increased scrutiny from our nation's capital. With increased scrutiny comes a host of policy-related issues, from debates over how best to use this valuable new resource to the need for federal oversight and regulation.

1. Federal Regulation

Whether and how the federal government plans to regulate shale gas continues to pose a major concern for manufacturers. By early 2012, no fewer

[11] "Shale Gas Revolution Spurs Wave of New U.S. Steel Plants," *Bloomberg*, Dec. 31, 2012, available at http://www.bloomberg.com/news/2012-12-31/shale-gas-revolution-spurs-wave-of-new-u-s-steel-plants-energy.html.
[12] *Id.*
[13] Fullenbaum, Richard, and John Larson, *The Economic and Employment Contributions of Unconventional Gas Development in State Economies*, June 2012, available at http://www.anga.us/media/content/F7D4500D-DD3A-1073-DA3480BE3CA41595/files/state_unconv_gas_economic_contribution.pdf.

than 12 federal agencies were considering some form of oversight or regulation of the practice of hydraulic fracturing. The NAM brought this issue to the White House, and in response, President Obama issued an Executive Order in April 2012 requiring federal agencies to better communicate and coordinate with one another.[14] The pace of federal oversight appears to have slowed, but there are still a number of regulations under development. There is no easier way to limit the job-creating potential of natural gas to manufacturers than to lump so many costly, time-consuming regulations onto the drilling process that the gas never gets out of the ground.

One regulation that greatly concerns manufacturers is the pending disclosure and well stimulation rule under development at the Bureau of Land Management (BLM). The BLM performed a cost-benefit analysis for the proposed regulation, and under virtually every scenario modeled, the rule's costs outweighed its benefits. The BLM recently announced that it has revised the rule and will issue a new proposal for public comment. The NAM is cautiously optimistic that the BLM will fix the rule, which an economic analysis by John Dunham & Associates for the Western Energy Alliance found would cost $1.615 billion for new and existing wells in the 13 western states that contain the preponderance of the nation's federal and Indian lands. The regulation would impact an estimated 5,058 wells waiting to be permitted or drilled. The study found that Wyoming would see the biggest cost impact from the proposed rule,

[14] "Executive Order—Supporting Safe and Responsible Development of Unconventional Domestic Natural Gas Resources," Apr. 13, 2012.

with an average $771.7 million in costs, followed by New Mexico with $169.0 million, Utah with $155.2 million and Colorado with $142.7 million.

States have long been the primary regulators of hydraulic fracturing. The NAM believes states should continue to be the main regulators of this industry and is concerned that reactive federal regulation could harm any potential gains resulting from increased exploration of shale oil and gas. Where there is a perceived deficiency in any one state's regulatory mechanisms, the federal government should work with the state to fill in the gaps rather than imposing a one-size-fits-all federal rule on states where no deficiencies exist. In fact, there are existing programs in place to ensure that state regulation is sufficient. The State Review of Oil & Natural Gas Environmental Regulations (STRONGER) program reviews states' oil and gas regulatory programs and recommends improvements. The Interstate Oil and Gas Compact Commission also supports the states with model regulations. There is no legitimate reason why the continued operation of these programs will not be sufficient to ensure effective state regulation that meets the federal government's goals.

2. Liquefied Natural Gas (LNG) Exports

The NAM was founded in 1895 on principles of free trade. At the time, the United States was in the midst of a deep recession, and many of the nation's manufacturers saw a strong need to export their products. This commitment to free trade and open markets continues to be embedded in the NAM's policies today. Exports have been and continue to be a critical source of growth and opportunity for manufacturers throughout the United States. The 40 percent

increase in goods exports that the United States has enjoyed between 2009 and 2011 has enabled many manufacturers to sustain and, in some cases, even grow employment during very difficult economic times. Export growth is vital not just for those businesses that directly export, but for the many suppliers of inputs and services to those businesses throughout every state.

Natural gas liquefaction is a manufacturing process. To convert natural gas to LNG, the gas is purified by removing any condensates, such as water, oil and mud, as well as other gases, such as carbon dioxide and hydrogen sulfide and trace amounts of mercury. The gas is then supercooled in several stages until it is liquefied and ready for shipping.

The Department of Energy (DOE) has received applications for 15 proposed terminals seeking to export LNG to non-free trade agreement (FTA) countries. While most of these proposed terminals have received approval to export to FTA countries, only one terminal in the United States—Sabine Pass in Louisiana—has been permitted to export to non-FTA countries. Under the Natural Gas Act of 1938, anyone seeking to export natural gas must obtain prior authorization to do so from the DOE. The Act instructs the DOE to issue an order allowing natural gas exports unless, after opportunity for hearing, it finds that the proposed exports would not be consistent with public interests. Exports to FTA countries are deemed to be in the public interest and thus enjoy an expedited permitting process. Even for exports to non-FTA countries, the public interest of LNG exports is presumed, but this presumption is rebuttable on a successful showing that the exports at issue are contrary to the economic, environmental

and/or energy security interests[15] of the United States. The public interest finding is specific to and required for each individual export terminal seeking exports to non-FTA countries; thus, each of the 15 pending applicants will need to successfully navigate the public interest determination process.

The NAM believes that LNG exports should be governed by principles of free trade and open markets. The NAM also opposes bans or similar market-distorting barriers to exports of LNG or any other commodity.

Natural gas is vitally important to manufacturers and job creation, as well as achieving affordable energy in this country. We are committed to increasing our vast domestic onshore and offshore energy resources with balanced and sensible regulation. Regarding LNG and natural gas, the NAM's official policy positions were established in March 2012 by the NAM Board of Directors, with full participation in the drafting by both energy producers and users. They are as follows:

> **Liquefied Natural Gas**
> The dramatic increase in the domestic natural gas resource base has reduced the likelihood of the need for significant Liquefied Natural Gas (LNG) imports. Some now believe the U.S. could eventually become a net exporter of natural gas. An adequate supply of natural gas is needed to meet the growing demand of the U.S. manufacturing sector in a recovering economy. The NAM strongly supports federal and state policies to accommodate growth in domestic natural gas production. We further believe abundant domestic natural gas resources can fuel a renaissance in U.S. manufacturing. The NAM fundamentally supports free trade and open markets. We support a natural gas policy process that is open, transparent and objective.

[15] Economic, environmental and energy security interests are the factors the DOE traditionally considers, although it is within its authority to consider other factors in making the public interest determination.

Natural Gas and Manufacturing
Industry relies on natural gas for much of its energy needs and as a raw material. The NAM believes policies that encourage the cost-effective use of natural gas to grow American manufacturing should be encouraged.

The U.S. economy relies on natural gas for much of its energy needs and as a feedstock for commercial products. Natural gas is and will remain an important manufacturing commodity because of its scalability, affordability, versatility and efficiency. The NAM supports policies at the federal and state level that facilitate the responsible and expeditious development of natural gas resources, allowing these benefits to contribute to America's economic recovery and to accrue for energy consumers.

The principles above remain the policy of the NAM on LNG and natural gas.

As clearly indicated by the policy language above, the NAM is not calling for policies that favor LNG exports over the use of natural gas domestically. Nor are we calling for policies that would engineer the opposite. Our policy statements highlight the important role domestic natural gas resources can have for the manufacturing economy. Natural gas truly does have the potential to be a game-changer that could fuel major investments across the manufacturing supply chain, supporting millions of jobs and ensuring that the United States remains the world's top manufacturing economy. As our policy makes clear, we believe "abundant domestic natural gas resources can fuel a renaissance in U.S. manufacturing," and "encourage the cost-effective use of natural gas to grow American manufacturing." We believe in "a natural gas policy process that is open, transparent and objective." With that in mind, the NAM urges the DOE and policymakers to rely on the best-quality information regarding the impact of LNG exports on economic, environmental and energy security interests.

The NAM also opposes bans on the export of LNG. From the President's first State of the Union address, doubling U.S. exports has been a top U.S. goal. From its origins, the United States has been built on exports. In fact, Article I, Section 9 of the U.S. Constitution provides quite explicitly that "[n]o Tax or duty shall be laid on Articles exported from any State," evincing a strong disinclination to limit exports of any product.

With 95 percent of the world's consumers living outside of the United States, export bans on any product, including LNG, can be expected to have far-reaching negative effects, including on domestic economic opportunities, employment and ultimately economic growth. The NAM's policies on international trade, established by the NAM Board of Directors in March 2012, form the basis for this position:

> **International Trade**
> The objective of the NAM's international trade policy is to strengthen manufacturing in America and improve the competitiveness of American manufacturing in the worldwide economy. Fairly conducted trade provides opportunities for growth and expansion of manufacturing in America, increases the range of goods and services available to consumers, enhances market-based production globally and contributes to closer understanding and cooperation among nations. The NAM believes this objective can best be achieved by limiting costs and other impediments imposed on U.S. manufacturers and by pursuing and utilizing a rules-based international trading system that enhances the role of free market forces while seeking to eliminate market-distorting governmental intervention.
>
> **WTO Dispute Settlement**
> The NAM believes all WTO member economies, including the United States, should comply with WTO agreements, including the Dispute Settlement Understanding.

The United States and its G-20 partners have repeatedly expressed their deep concern about rising protectionism, including, in particular, export restrictions, which began to proliferate globally as the world economy declined in 2008. Export restrictions are viewed as one of the fastest-growing forms of distortion in the international trading system. The Organisation for Economic Co-operation and Development (OECD) has been keeping an inventory on export restrictions and has published analytical work examining the economic concerns with imposing such restrictions.[16]

The United States has been in the forefront of challenging other countries' export prohibitions, starting with China's restrictions on raw material exports and more recently China's restraints on rare earth exports. In the raw materials case the WTO found conclusively that China's raw material export quantitative restrictions were contrary to the core international trade disciplines of the WTO, including GATT Articles XI:1[17] that generally prohibit the use of export bans and quantitative export restraints. These obligations apply equally to the United States, China and all other WTO members.

The United States' ability to challenge other countries' existing exports restraints on agricultural, forestry, mineral and ferrous scrap products—just to name a few—will be virtually nonexistent if the United States begins imposing its own export restrictions. Even worse, as the world's largest economy and largest

[16] The Economic Impact of Export Restrictions on Raw Materials, OECD (Nov. 2010).

[17] GATT XI:1 states: "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."

trading country, U.S. actions are often replicated by our trading partners to our own dismay. If the United States went down the path of export restrictions, even more countries would quickly follow suit and could easily limit U.S. access to other key natural resources or inputs that are not readily available in the United States.

3. Permitting

The long, complex and often unmanageable permitting process remains a major obstacle—if not *the* major obstacle—to full and robust development of our nation's energy resources. Natural gas development is no exception. The NAM strongly urges this Committee to consider legislation to streamline the permitting process for energy projects.

Natural gas producers must generally obtain permits that include approval of well design, casing and cementing, the well stimulation (hydraulic fracturing) program, chemicals used, waste disposal and storage. They now must also comply with EPA New Source Performance Standards (NSPS) for emissions. For wells on Federal or Indian lands, the BLM proposed rule would add an open-ended new layer of permitting that governs many of the same areas (well construction, water protection, chemical disclosure) as the state permits. Those drilling-specific permits must be obtained in addition to other general state and local permits for construction and related activities.

For an LNG export facility, the permitting process is truly daunting. Applicants not only must apply to the DOE for an export license, but also must engage in an environmental review of their project under the National

Environmental Policy Act (NEPA) led by the Federal Energy Regulatory Commission (FERC). Compliance with NEPA requires that the project developer first acquire land and begin design and engineering plans, a two-year time commitment. The NEPA review process requires the input of up to 20 federal and state agencies coordinated by FERC that have a say in the review. During the course of the NEPA review, applicants must obtain, among other things, a dredge-and-fill permit from the Army Corps of Engineers (with input from EPA), a Waterway Suitability Assessment from the U.S. Coast Guard, air permits from EPA and state agencies, and the usual state and local permits for construction and related activities. Detailed project engineering design work and project study is required for compliance with NEPA, requiring tens of millions of dollars in up-front capital and a significant commitment in time. The average time to complete an environmental impact statement (EIS) under NEPA takes an average of 3.4 years, a number that increases by an average of 37 days with each passing year.[18] Assuming the applicant can make it through this process and receives final NEPA approval, the project is still subject to lawsuits from private parties over the substance of the NEPA environmental review for six years. If the applicant somehow survives that process, it also must find long-term contracts to sell the product and approach the financial community to secure financing (roughly $10 billion) to construct and operate the project. All of this is in addition to the export license that must also be obtained from DOE at some point during the process.

[18] Piet deWitt, Carole A. deWitt, "How Long Does It Take to Prepare an Environmental Impact Statement?" *Environmental Practice* 10 (4), December 2008.

The permitting process appears to be getting worse. The EPA and the Sierra Club recently urged FERC to consider the upstream implications of natural gas development when permitting LNG terminals and related pipeline infrastructure in Maryland and Oregon. FERC concluded that upstream natural gas development is not a reasonably foreseeable impact of the construction of an export terminal or related pipeline infrastructure, a finding consistent with NEPA, which requires a "reasonably close causal relationship" in order for an impact to be relevant.[19] However, the EPA and other officials are making a similar argument to extend NEPA with respect to coal export facilities in the Pacific Northwest, and negative precedent established in that context could migrate to natural gas permitting. The NAM strongly opposes using NEPA to require a cradle-to-grave, lifecycle impact analysis that assesses the impact of the cargo and all similar cargo transported through the region, which would create a very dangerous precedent that could be used to block exports of all types.

If manufacturers are to create jobs and boost the economy through natural gas development, they must be able to depend on a predictable, reliable and efficient permitting process. The NAM believes strong actions must be taken to streamline the permitting process for energy projects before it is too late.

Conclusion

With the right energy policies in place, manufacturers could experience a true resurgence. Robust development of our nation's vast natural gas resources will help drive domestic manufacturing as a critical component of a true "all-of-the-above" energy strategy. We must expect that other nations will soon develop

[19] *U.S. Department of Transportation v. Public Citizen*, 541 U.S. 752, 767 (2004).

the technologies and methods to access their own unconventional gas resources, giving the United States a relatively limited window of time in which it can truly exploit the current cost advantage. The NAM stands ready to support the Committee's efforts to promote natural gas development and the manufacturing jobs it can provide.