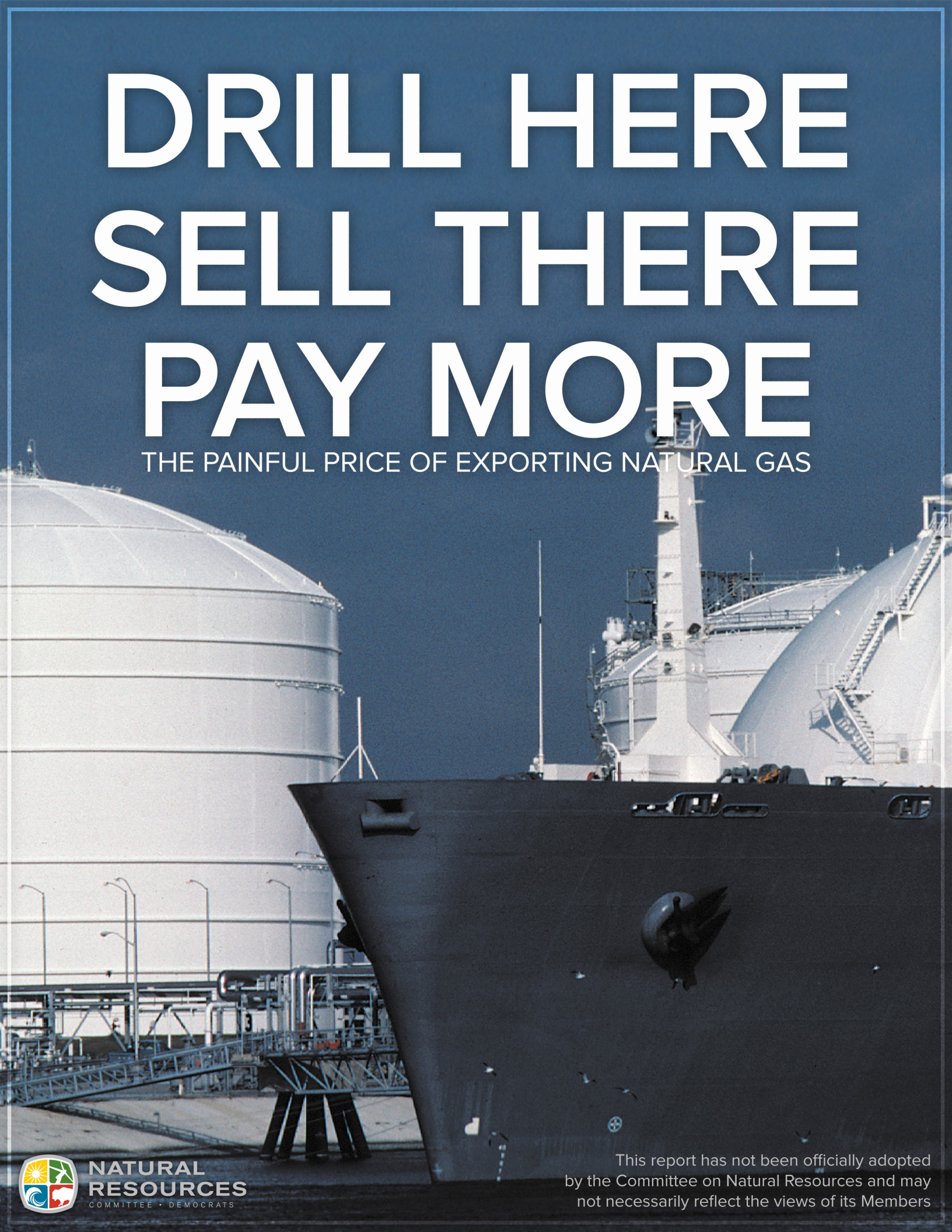
DRILL HERE SELL THERE PAY MORE

THE PAINFUL PRICE OF EXPORTING NATURAL GAS



NATURAL RESOURCES
COMMITTEE • DEMOCRATS

Executive Summary

The United States faces a critical decision about whether to export natural gas following the rapid expansion of domestic production in recent years. The Department of Energy has already approved one export application and is currently considering eight others. If these applications are approved and the companies export at full capacity, the United States could soon be exporting more than 20 percent of current consumption. The Energy Information Administration has estimated that exporting even less natural gas than what is currently under consideration could raise domestic prices 24 to 54 percent, which would substantially increase energy bills for American consumers and could potentially have catastrophic impacts on U.S. manufacturing.

In a February 24th letter to Massachusetts Congressman Edward J. Markey, Department of Energy (DOE) official Christopher Smith made clear that no additional export permits will be approved by the Department at least until an additional evaluation of the macroeconomic impact of these prospective exports is completed and reviewed by DOE this spring.[1] This decision represents an important deliberative step that ensures deeper consideration will be given to the ramifications of energy exporting.

In examining energy markets and the impacts of higher natural gas prices, the House Natural Resources Democratic Staff found that:

- Unlike the oil market, natural gas prices are not determined on a global market. Natural gas prices in Europe and Asia are 3 to 7 times higher than in the United States. This provides the American economy with a competitive advantage in the manufacture of energy-intensive goods.

- From 2000 to 2008, the price of natural gas rose more than 400 percent, and was a major contributor to the U.S. manufacturing sector losing 3.7 million jobs. While larger macroeconomic forces were also at work during this period, it is clear that the cost of natural gas for industries like steel, plastics, chemicals, paper, glass, fertilizer, cement, and refining is a very significant determinant in whether facilities are sited domestically or overseas. Keeping American natural gas resources in America and keeping prices low will support a more diversified domestic economy and provide greater domestic job benefits than pursuing an export strategy.

- Keeping natural gas resources at home will allow greater amounts of natural gas to be used in the domestic electric power and transportation sectors. Greater natural gas utilization in these sectors could lead directly to a 1.2 million barrel per day reduction in

[1] Included as an appendix to this report.

foreign oil imports and a 9 percent reduction in coal consumption by 2035, which would measurably enhance America's national, economic, and environmental security.

Legislation introduced by Rep. Markey would prevent companies from exporting natural gas extracted from public lands (H.R. 4025) and would place a moratorium on the Federal Energy Regulatory Commission approving the siting and development of LNG export terminals before 2025, except under special circumstances (H.R. 4024).

Background

On June 10, 2003, the Chairman of the Federal Reserve Board, Alan Greenspan, testified before the House Energy and Commerce Committee that rising natural gas prices were harming domestic manufacturers and that large numbers of liquefied natural gas (LNG) terminals were needed to import more natural gas and stabilize prices. He said:

> *The updrift and volatility of the spot price for gas have put significant segments of the North American gas-using industry in a weakened competitive position. …The perceived tightening of long-term demand-supply balances is beginning to price some industrial demand out of the market. …Access to world natural gas supplies will require a major expansion of LNG terminal import capacity. …As the technology of LNG liquefaction and shipping has improved, and as safety considerations have lessened, a major expansion of U.S. import capability appears to be under way. These movements bode well for widespread natural gas availability in North America in the years ahead.*[2]

Chairman Greenspan was half right. Since natural gas is both the primary fuel source for the industrial sector and a primary feedstock for the production of plastics, chemicals, fertilizers, and many other products, low-price natural gas is essential to our industrial competitiveness. The increase in natural gas prices of more than 400 percent between 2000 and 2008 significantly undermined American industrial competitiveness and was a major factor in the loss of 3.7 million manufacturing jobs during that time.[3]

But Chairman Greenspan turned out to be wrong about our need to import large amounts of LNG. Subsequent discoveries of domestic shale gas deposits and advances in horizontal drilling and hydraulic fracturing techniques, have led to expanded domestic gas reserves and production and the lowest well-head prices[4] in 10 years. Of the nearly 50 LNG import terminals that have been certified for construction,[5] only 12 facilities were ultimately built.[6] And of this 6.95 trillion cubic feet (Tcf) of LNG import capacity, only 0.35 Tcf of natural gas was actually

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[2] Testimony of Alan Greenspan, Chairman, Federal Reserve, before the House Committee on Energy and Commerce, June 10, 2003, available at http://www.federalreserve.gov/boarddocs/testimony/2003/20030610/default.htm

[3] Testimony of Rich Wells, Vice President Energy, The Dow Chemical Company, before the House Select Committee on Energy Independence and Global Warming, July 30, 2008, available at http://globalwarming.house.gov/files/HRG/FullTranscripts/110-46_2008-07-30.pdf

[4] The well-head price is the price charged by the producer for petroleum or natural gas without transportation costs. See http://www.merriam-webster.com/dictionary/wellhead+price#

[5] Testimony of Kenneth B. Medlock III, Rice University, before the Senate Committee on Energy and Natural Resources, Nov. 8, 2011, available at http://energy.senate.gov/public/_files/MedlockTestimony110811.pdf.

[6] Federal Energy Regulatory Commission, North American LNG Import Terminals – Existing, January 10, 2012, available at http://ferc.gov/industries/gas/indus-act/lng/LNG-existing.pdf

imported in 2011, a utilization rate of 5 percent.[7] Several of these import terminals are now mothballed entirely and their owners are looking to turn them into LNG export terminals. [8]

The Natural Gas Market Today

Natural gas production in the United States reached a historical high in November 2011, when producers withdrew an average of 82.7 billion cubic feet per day, 18 percent higher than five years earlier.[9] This expansion in domestic natural gas supplies has led to a reduction in domestic prices. Even while consumption of natural gas has been increasing, the average wellhead price has stayed below $5 per million cubic feet (Mcf) for more than two years. Shale gas now accounts for more than a third of total U.S. gas resources.[10] The Energy Information Administration (EIA) estimates that shale gas will provide 49 percent of total U.S. natural gas supply by 2035, up from 23 percent in 2010.[11] Net imports now represent 10 percent of total U.S. consumption, the lowest proportion since 1993, and this share is expected to continue to shrink.

Unlike oil, natural gas prices are not set on a global market. Natural gas cannot currently be moved cheaply in volumes great enough to efficiently link low-cost producing regions with high-demand regions. With massive deployment of expensive infrastructure—international natural gas pipelines, special cryogenic LNG tankers, liquefaction equipment—regional natural prices would converge to a global price in the same way that global oil prices have emerged. However, like the oil market, a global natural gas market could be manipulated by nations, national companies, and cartels in the same way that the Organization of Petroleum Exporting Countries (OPEC) now manipulates the global oil market.

Regional variation in natural gas prices is considerable, as seen in Figure 1. For example, natural gas prices are six to seven times higher in Asia than they are in the United States. Prices are more than three times higher throughout most of Europe. The regional nature of the natural gas market clearly benefits American consumers and businesses.

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[7] Federal Energy Regulatory Commission, North American LNG Import Terminals – Existing, January 10, 2012, available at http://ferc.gov/industries/gas/indus-act/lng/LNG-existing.pdf; Energy Information Administration, *U.S. Natural Gas Imports by Country,* available at http://www.eia.gov/dnav/ng/ng_move_impc_s1_a.htm

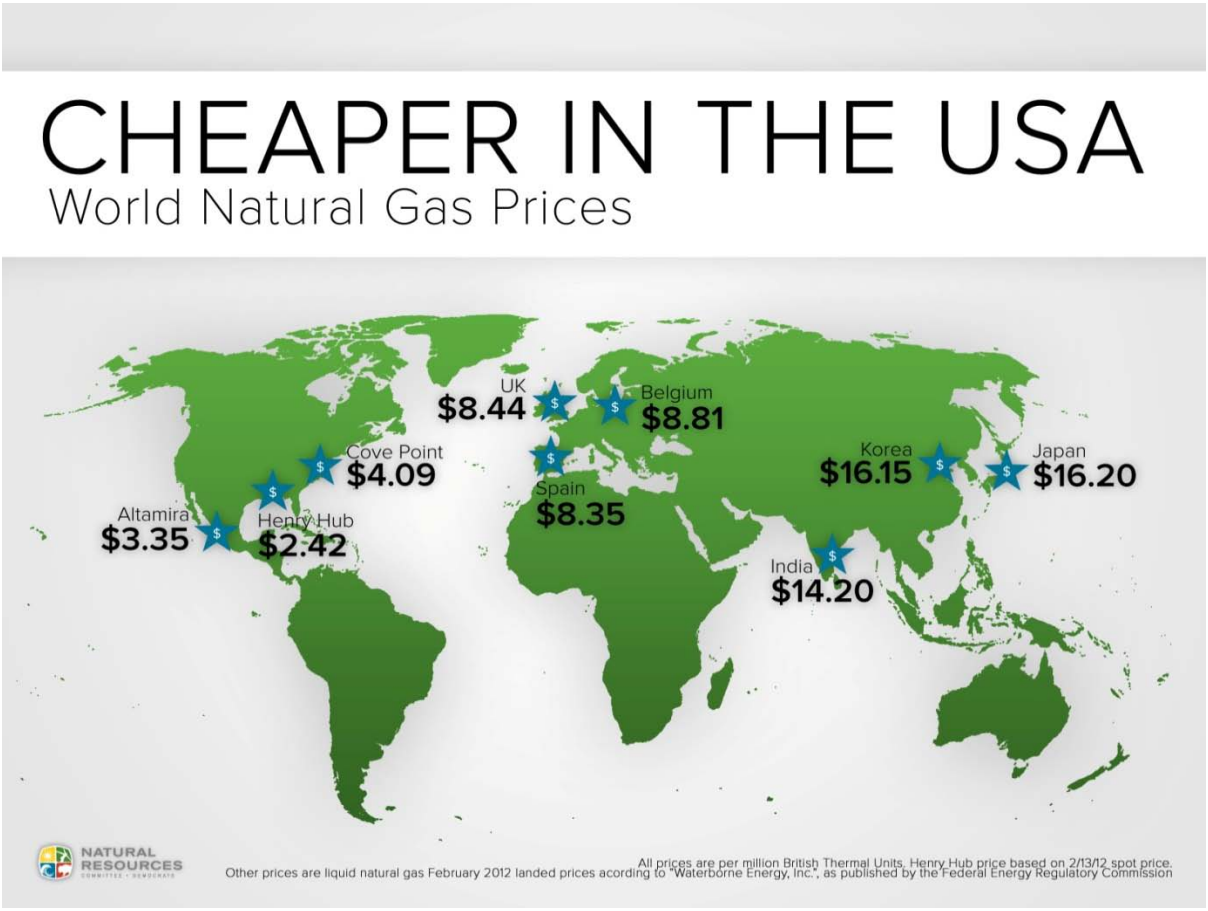
[8] Energy Information Administration, *U.S. Natural Gas Imports by Point of Entry*, available at http://www.eia.gov/dnav/ng/ng_move_poe1_a_EPG0_IML_Mmcf_a.htm

[9] Energy Information Administration, *Monthly Natural Gas Gross Production Report,* February, 2012, available at *http://www.eia.gov/oil_gas/natural_gas/data_publications/eia914/eia914.html*

[10] U.S. Geological Survey, *Total Oil and Gas Resources*, available at http://certmapper.cr.usgs.gov/data/noga00/natl/tabular/2011/2011_FINAL_TABLE.xls

[11] Energy Information Administration, *Annual Energy Outlook 2012*, available at *http://www.eia.doe.gov/oiaf/aeo/*

Figure 1. Natural Gas Prices around the World

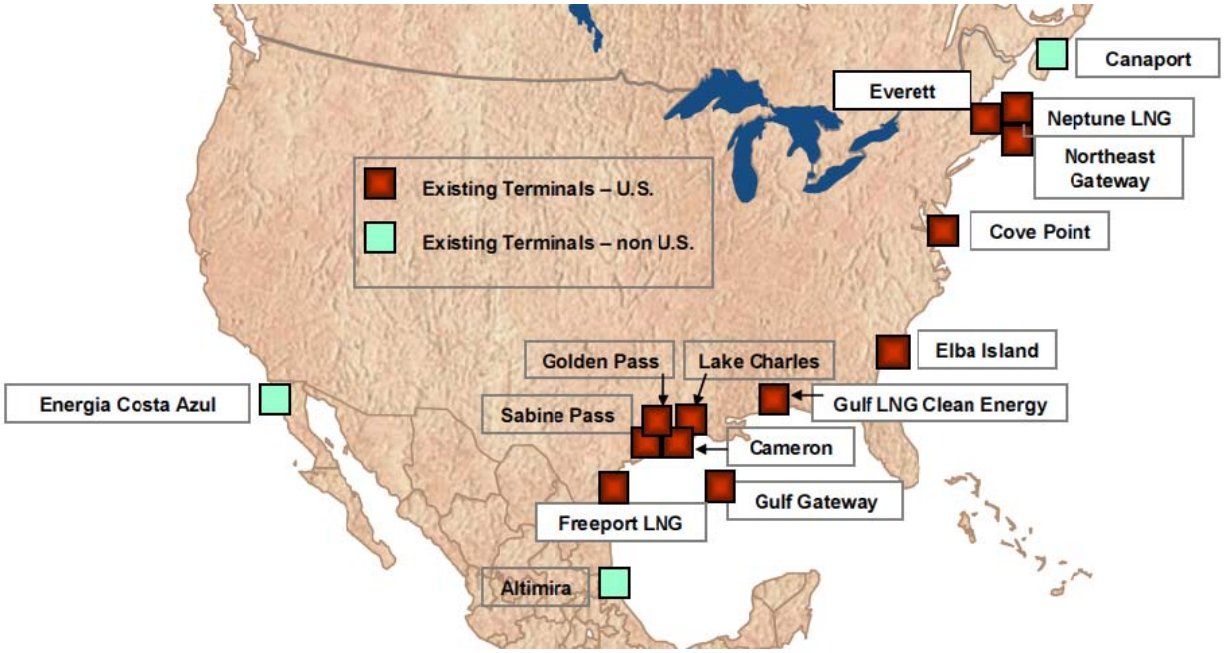


The Department of Energy Considers Export Permits

Export Applications Pour In

As a result of high domestic natural gas production and higher prices in foreign markets, several companies have submitted applications to the Department of Energy over the past year seeking permits to export domestically produced natural gas. Most of these applications are planning to use LNG terminals that were originally built for importing. Existing terminals can be seen in Figure 2.

Figure 2. Existing North American LNG Terminals



Source: U.S. Department of Energy. Available at:
http://fossil.energy.gov/programs/oilgas/storage/publications/Complete_LNG_Terminal_Status_Maps_Q2_201.pdf

DOE has already approved a plan from a Cheniere Energy subsidiary, Sabine Pass Liquefaction, to export LNG through a terminal originally built for importing the fuel. This export facility, which is still at least four years away from becoming operational, has booked major deals to export American natural gas to Indian and Korean markets and, in total, has long-term agreements in place to export 89 percent of its approved capacity.[12] DOE is now considering eight other LNG export applications. If all nine export applications are approved and this export capacity is fully utilized, the companies would export an amount equal to 20.6 percent of current U.S. consumption, according to data provided by DOE to Democratic staff on the House Natural Resources Committee.

After the Sabine Pass approval in May of 2011 and the subsequent rush of new applicants, DOE commissioned the EIA and a private contractor to undertake separate studies on the cumulative impacts of pending natural gas export applications. DOE has since committed to withhold approval of the pending export applications until these studies are completed. EIA released its study in January, finding that domestic natural gas prices could rise more than 50 percent if exports take off (see summary below). The second study is scheduled to be completed this spring.

[12] Edward Klump, *Korea Gas to Buy U.S. LNG as Gas Slump Attracts Asian Importers*, available at http://www.bloomberg.com/news/2012-01-30/cheniere-agrees-to-sabine-pass-export-deal-with-korea-gas-1-.html

Roles and Authorities

Section 3(a) of the Natural Gas Act of 1938 defines the process for DOE's reviews of most LNG export applications. In particular, the Secretary of Energy must approve an export application "unless after opportunity for hearing, [the Secretary] finds that the proposed exportation… will not be consistent with the public interest." Thus, there is "a rebuttable presumption that a proposed export of natural gas is in the public interest," according to DOE. This presumption must be overcome for DOE to deny an export application. For export approvals, DOE may also attach terms or conditions that it considers necessary to protect the public interest.

The Energy Policy Act of 1992 amended the Natural Gas Act to further limit DOE's ability to deny natural gas export applications. Specifically, DOE *must* approve applications to export natural gas to the 15 countries that have free trade agreements (FTAs) with the United States covering natural gas.[13] Such applications are automatically deemed in the public interest, and DOE cannot add any terms or conditions to approvals.

In addition to DOE authorization to export LNG, companies must receive authorization from the Federal Energy Regulatory Commission (FERC) for the actual siting and development of LNG projects, as specified under Section 3 of the Natural Gas Act.[14] FERC is also the lead agency responsible for the preparation of the analysis and decisions required under National Environmental Policy Act for the approval of new facilities, including tanker operation, marine facilities, and terminal construction and operation, environmental and cultural impacts.[15]

The Energy Information Administration Study

If DOE approves the pending applications and exports rise as expected, domestic natural gas prices could increase 24 to 54 percent, depending on recoverable shale resources and how quickly exports are ramped up, according to the EIA's January report.[16] About three-quarters of the increased natural gas production needed to satisfy such export demand would come from shale sources, according to an EIA export scenario. That would require a dramatic expansion of hydraulic fracturing, or "fracking," which is necessary to access these resources.

Higher prices are also expected to substantially reduce U.S. demand for natural gas. Around 30 to 40 percent of natural gas export demand would be met through reduced domestic consumption, not increased production, according to EIA. Consequently, EIA projects that dirty

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[13] These countries are Australia, Bahrain, Canada, Chile, Dominican Republic, El Salvador, Guatemala, Honduras, Jordan, Mexico, Morocco, Nicaragua, Oman, Peru, and Singapore. Three other countries, South Korea, Colombia, and Panama, will soon join this club when their Senate-ratified trade agreements take effect.

[14] 15 U.S.C. § 717

[15] Interagency Agreement Among the FERC et al. Available at: www.ferc.gov/legal/maj-ord-reg/mou/mou-24.pdf

[16] Energy Information Administration, *Effect of Increase Natural Gas Exports on Domestic Energy Markets*, available at http://www.eia.gov/analysis/requests/fe/pdf/fe_lng.pdf

coal-fired power generation will rise in the United States to make up for the expected decline in natural gas-fired electricity generation.

Energy Department Responds to Markey Letter

Rep. Markey, Ranking Member on the House Natural Resources Committee, wrote to Energy Secretary Steven Chu in January asking about the consequences of exporting greater amounts of natural gas, including the consequences for prices, manufacturing and economic growth, energy security, and the environment.

Deputy Assistant Secretary Christopher Smith responded on behalf of Secretary Chu. This response, delivered February 24th, noted that DOE has already approved the export of 10.93 billion cubic feet of natural gas per day (Bcf/d) to countries with free trade agreements with the United States.[17] The EIA report looked at export scenarios associated with the approval of additional exports to counties without free trade agreements. The second report by the private contractor is still being completed, but Smith wrote that it would provide important information about the macroeconomic consequences resulting from EIA's export scenarios, including:

- Consequences for domestic energy consumption, production, and prices;
- Effects on gross domestic product, job creation, and balance of trade; and
- Impacts on U.S. manufacturers, especially energy intensive industries.

Smith made clear that DOE would not approve the pending export applications until this study is finished and DOE has considered the findings. "We are mindful of the need for prompt action in each of the non-FTA LNG export proceedings before us," Smith wrote. "We are equally mindful that a sound evidentiary record is essential to reach a reasoned decision in these proceedings. As such, DOE will not issue a final order addressing the pending applications to export LNG to non-FTA countries until the full study has been completed and the Department has had an opportunity to review the results."

Economic Ramifications of Exporting

The United States currently enjoys affordable natural gas that benefits consumers and also provides us with a competitive advantage that is felt up and down the U.S. economy. Affordable natural gas keeps energy prices low for consumers that rely on natural gas for heating, cooking, and electricity. Increasing those energy costs on American consumers and businesses by exporting would have a direct impact on their disposable income and reduce their purchasing power.

Industrial and manufacturing facilities are the largest consumers of natural gas in the United States—ahead of the electricity, commercial, and residential sectors—and would be especially hard hit. These facilities may require natural gas not only as a primary energy source

[17] DOE now has pending or approved permits for exports to FTA countries totaling 12.51 Bfc/d. DOE LNG docket available at: http://fossil.energy.gov/programs/gasregulation/LNG_Summary_Table_2-29-12_2.pdf

but also use it as a physical input into product. In some sectors, like fertilizers and chemicals, natural gas can constitute 80 to 90 percent of the cost of production. For businesses like these, the cost of energy may be the number one determining factor in whether to site production in the United States and employ American workers or whether to move production overseas.

In the past, high natural gas prices have had a disastrous effect on U.S. manufacturing. From 2000 to 2008, the price of natural gas rose more than 400 percent, and was a major contributor to the U.S. manufacturing sector losing 3.7 million jobs.[18] Other variables were certainly relevant to this undermining of manufacturing competitiveness as well, including the 2001 recession in the global trend of moving manufacturing to countries with lower labor costs. However, for energy intensive industries—like aluminum, steel, plastics, chemicals, paper, glass, fertilizer, food processing, cement, and refining—the cost of energy is a far greater share of production costs than labor and a more significant determinant in facility siting.

The experiences of some specific energy-intensive industries below illustrate the dangers that natural gas exporting could have on sectors of the U.S. economy.

Fertilizer Industry

An important use of natural gas is as a feedstock in fertilizer production. In this process, natural gas is used to produce ammonia, which has a high nitrogen content, and the ammonia becomes the primary component of nitrogen fertilizers. It takes 33,500 cubic feet of natural gas to manufacture 1 ton of anhydrous ammonia fertilizer.[19] As a result, natural gas can account for up to 90 percent of the cost to produce ammonia fertilizer.[20]

The fertilizer sector is the largest industrial consumer of natural gas in the United States, consuming 60 percent of U.S. industrial demand.[21] The period between 2000 and 2006 was a devastating one for the U.S. fertilizer industry, as seen in Figure 3. Domestic ammonia fertilizer production declined 44 percent, and more than a third of all U.S. fertilizer production capacity shuttered. At the same time, imports skyrocketed 115 percent.[22]

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[18] Dow Jones Industrial Average Basic Chart, Yahoo! Finance, available at http://finance.yahoo.com/q/bc?s=%5EDJI&t=my&l=on&z=l&q=l&c=;

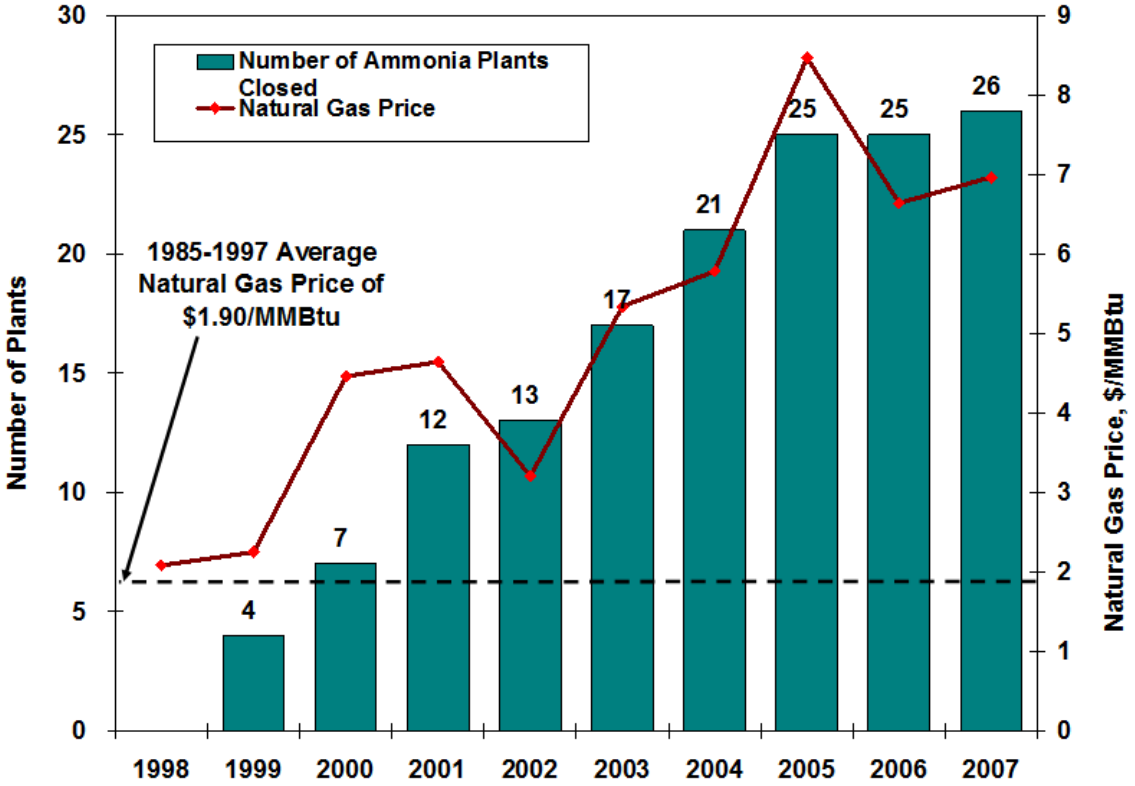
[19] Eddie Funderberg, *Why are Natural Gas Prices So High?*, available at http://www.noble.org/ag/soils/nitrogenprices/index.htm

[20] *Domestic Nitrogen Fertilizer Production Depends on Natural Gas Availability and Prices*, U.S. General Accounting Office, GA)-03-1148, September 2003.

[21] Robert Pirog, Specialist in Energy Economics, Congressional Research Service, *Industrial Demand and the Changing Natural Gas Market* February 10, 2011, available at http://www.crs.gov/pages/Reports.aspx?PRODCODE=R41628&Source=author

[22] Wen-yuan Huang, USDA, *Impact of Rising Natural Gas Prices on U.S. Ammonia Supply*, available at http://www.ers.usda.gov/publications/wrs0702/wrs0702.pdf

Figure: 3. U.S. Ammonia Plant Closures Increase as Natural Gas Prices Rise



Source: Blue, Johnson and Associates, IFDC, Natural Gas Week and The Fertilizer Institute

The harm to the U.S. economy and domestic jobs was not limited to merely the fertilizer industry. The cost of buying fertilizer to farmers rose 130 percent between 2000 and 2006, from $227 per ton to $521. Farmers get especially squeezed with higher fertilizer costs because they are often times unable to pass along higher fertilizer costs in what they charge for their commodity crops. According to the U.S. Department of Agriculture, "With lower crop prices, high fertilizer prices would place downward pressure on farmers' net returns. Farms with higher than average fertilizer costs, a greater need to use fertilizers on the crops they grow, and/or a limited ability to either move away from fertilizer-intensive crops or substitute other inputs will be especially vulnerable if fertilizer prices increase once again."[23]

[23] Wen-yuan Huang, USDA, Recent Volatility in U.S. Fertilizer Prices, available at http://www.ers.usda.gov/AmberWaves/March09/Features/FertilizerPrices.htm

With U.S. natural gas prices at 10-year lows, fertilizer production is coming back to the United States, albeit slowly. Over the past two years, several facilities have returned to production and a series of large expansions are under consideration:[24]

- Oklahoma-based LSB Industries reopened its Pryor, Oklahoma ammonia facility in 2009 and two smaller units at Pryor will restart soon as well.

- Orascom Construction has purchased and reopened a large ammonia plant in Beaumont, Texas. The company announced earlier this year that "Low natural gas prices in the U.S. were a deciding factor in the company's decision to acquire and rehabilitate the plant."

- PCS Corporation is in the process of reopening its large plant in Geismar, Louisiana with an online target in the third quarter this year. It is also considering expansions at its Lima, Ohio and Augusta, Georgia plants.

- CF Industries has reopened portions of its giant Donaldsonville, Louisiana, facility in the past two years and has purchased an additional facility. The company announced last year that it plans to invest $1 billion to $1.5 billion over the next four years to expand its production capacity for ammonia and other products.

For farmers waiting to see a drop in fertilizer prices, this new domestic production cannot come online fast enough. Even though U.S. natural gas prices have fallen to 10-year lows, fertilizer prices remain high because the United States now imports more than half of its fertilizer. Imported fertilizer comes from regions which do not have the low natural gas prices that the United States is currently enjoying, increasing the prices for farmers.[25]

Chemicals and Plastics Industry

Chemical manufacturers rely on natural gas for 58 percent of their fuel and natural gas liquids for 58 percent of their feedstock.[26] Natural gas constitutes upwards of 80 percent of the total cost to produce plastic.[27] The high natural gas prices the U.S. chemical and plastics industry faced throughout much of the last decade significantly eroded the U.S. chemicals industry's competitive position. As detailed in Figure 4, the U.S. chemical industry was essentially wiped out as an export sector between 1997 and 2006, as net exports fell from $16.8 billion annually to $218 million. Of the largest 120 chemical plants being built around the world in 2005, exactly one was located in the United States. According to the U.S. Commerce Department, "The

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[24] Stephanie Seay, Platts, *Low gas costs may not be enough to spur large fertilizer expansion*, available at http://www.platts.com/RSSFeedDetailedNews/RSSFeed/NaturalGas/3915346

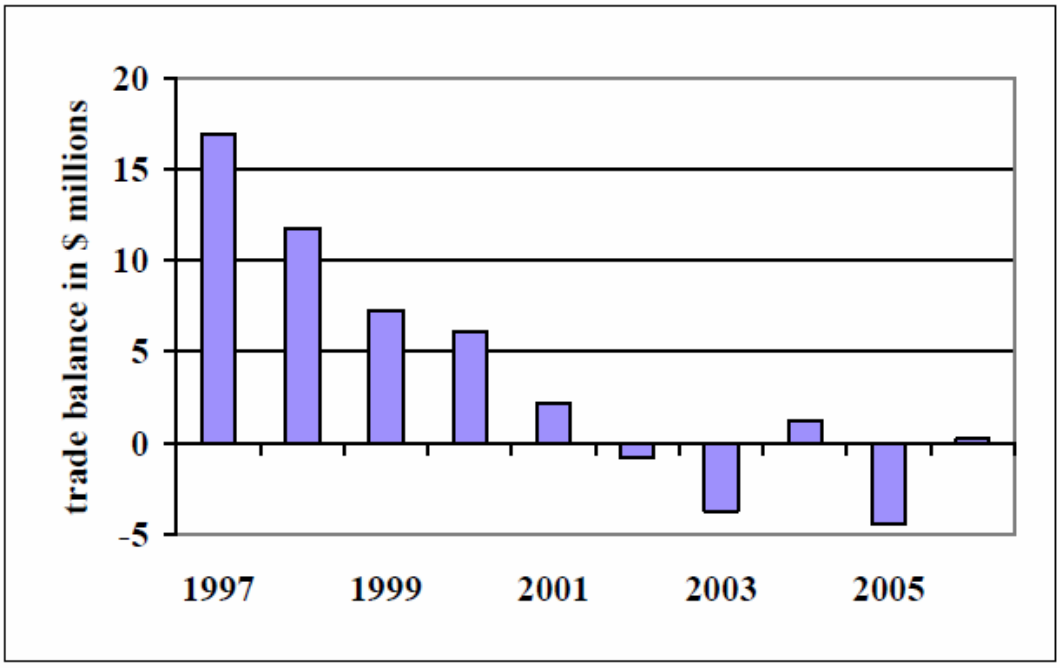
[25] Jonathan Knutson, Agweek, *Will tile drainage pay off?,* available at http://www.agweek.com/event/article/id/19564/

[26] American Chemistry Council, *Guide to the Business of Chemistry*, 2005.

[27] PowerPoint presentation "Manufacturing Competitiveness and Jobs Depend Upon Affordable and Reliable Electricity and Natural Gas," Industrial Energy Consumers of America, February 2012.

increase in U.S. natural gas prices has helped reduce and even eliminate in some recent years the United States' trade surplus in bulk chemicals."[28]

Figure 4. U.S. Trade Balance for Chemicals (not including pharmaceuticals)



Source: U.S. Department of Commerce, *Energy Policy and U.S. Industry Competitiveness. Available at:* *http://ita.doc.gov/td/energy/energy%20use%20by%20industry.pdf*

Appearing before the Select Committee on Energy Independence and Global Warming in 2008, the Dow Chemical Company's Vice President for Energy, Rich Wells, testified to the difficulties that the domestic chemical industry was facing. Dow had shut down dozens of uncompetitive U.S. plants in the previous decade as natural gas prices had skyrocketed. They were investing preferentially in the Middle East and other parts of the world where energy costs were lower. Wells explained that it was cheaper for chemical companies to move their manufacturing to where energy is cheap than to move cheap energy to their manufacturing.[29]

Once again, like the fertilizer sector, low domestic natural gas prices are driving a resurgence in the domestic chemical industry. According to the American Chemistry Council, "A new competitive advantage has already emerged for U.S. petrochemical producers."[30] Dow has

[28] Rachel Halpern, International Trade Administration, *Energy Policy and U.S. Industry Competitiveness*, available at http://ita.doc.gov/td/energy/energy%20use%20by%20industry.pdf

[29] Rich Wells, Vice President Energy, The Dow Chemical Company http://globalwarming.house.gov/files/HRG/FullTranscripts/110-46_2008-07-30.pdf

[30] American Chemistry Council, *Shale Gas and New Petrochemicals Investment: Benefits for the Economy, Jobs, and US Manufacturing, March, 2011, available at* http://www.americanchemistry.com/ACC-Shale-Report

announced it will increase key chemical processing capability along the Gulf Coast by 20 to 30 percent over the next two to three years. The American Chemistry Council estimates that if natural gas-based feedstock prices stay low and supply expands, the U.S. chemical industry is projected to invest $49 billion in new plants and equipment in the United States in the coming years and spur the creation of more than 400,000 jobs across the U.S. economy. Such investments would generate $44 billion in new federal, state, and local tax revenue over the next decade.[31] Low-priced natural gas is the key to unlocking these economic benefits.

Steel Industry

The domestic steel sector's fuel reliance is split mostly between natural gas, electricity, and coal-derived coke, and the sector's natural gas consumption makes up 4 percent of U.S. industrial natural gas use.[32] The steel industry is highly energy-intensive with very tight margins, and small changes in energy prices can have a significant impact on the cost of downstream manufactured goods like automobiles, construction equipment, and wind turbines. Recycled steel is especially energy intensive, and energy can account for 25 percent or more of the cost of production.[33]

Integrated steelmakers, which produce steel from raw iron ore, use natural gas as the primary energy source for the reheating and rolling procedures at the end of the steelmaking process. Recent low natural gas prices have allowed companies to replace costly and dirty coal-derived coke with natural gas, which has become a far more cost-effective way of melting iron ore. U.S. Steel estimates that with natural gas prices around what they are today, substituting natural gas for coal-derived coke translates to savings of $7 per ton of steel.[34] A $1 per million BTU increase in the price of natural gas would increase costs by more than $100 million for U.S. Steel, based on current gas usage and steel production levels.

Another American steel producer, Nucor, has utilized low natural gas prices to build new "direct reduced iron" facilities,[35] which combine natural gas with iron ore pellets to create a steady feedstock for the company's electric arc furnaces. This is a growing technology that now accounts for more than 60 percent of steel production in the United States. Low natural gas prices are critical to operating these types of facilities. Seven years ago, as U.S. natural gas prices

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[31] Id.

[32] American Iron and Steel Institute, *2010 Annual Statistical Report*, Table 37

[33] PowerPoint presentation "Manufacturing Competitiveness and Jobs Depend Upon Affordable and Reliable Electricity and Natural Gas," Industrial Energy Consumers of America, February 2012.

[34] U.S. Steel, second quarter conference call, July 26, 2011, available at http://seekingalpha.com/article/282049-united-states-steel-s-ceo-discusses-q2-2011-results-earnings-call-jul-26-2011-transcript

[35] Nucor press release, March 7, 2011, available at http://www.nucor.com/investor/news/releases/?rid=1536511

were much higher than today, Nucor relocated a facility to Trinidad in order to take advantage of "a low cost supply of natural gas."[36]

Conclusion

If we keep natural gas here at home, and keep prices low, we will accelerate the transition away from coal and foreign oil, making U.S. energy consumption not only cheaper, but cleaner and more secure.

Natural gas could eventually overtake coal as America's primary source of electricity. In just the last six years, coal's share of the U.S. electricity market has dropped from 50 percent to 43 percent, with natural gas displacing most of this production, along with wind. At the same time, buses and commercial fleet vehicles, which consume large amounts of fuel, are increasingly powered by natural gas instead of gasoline. "Replacing 3.5 million of these heavy vehicles with natural gas vehicles by 2035 would save more than 1.2 million barrels of oil per day compared to business as usual, which is more than we imported from either Venezuela or Saudi Arabia in 2009," according to a report by the Center for American Progress.[37]

Using more natural gas for electricity and transportation is expected to drive up U.S. demand by 18 percent by 2035 under current policies and commitments, "causing coal demand to drop by around 9% and oil demand by around 6%," according to the International Energy Agency.[38] This transition away from coal and foreign oil, however, could be slowed or jeopardized if we undermine our affordable domestic natural gas supply by exporting it to foreign markets.

To address these concerns Rep. Ed Markey has introduced two bills to stop natural gas from being exported. H.R. 4025 would prevent oil and gas companies from exporting natural gas extracted from public lands, and H.R. 4024 would place a moratorium on the Federal Energy Regulatory Commission approving the siting and development of LNG export terminals until 2025, except under special circumstances. Markey also offered a floor amendment to H.R. 3408, the so-called PIONEERS Act, that would have stopped the exporting of natural gas extracted from the public lands and waters opened up by the bill. That amendment failed by a vote of 173 to 254.

Instead of starting with a presumption in favor of exports, they should be evaluated against the following goals for American energy policy:

1. Keep energy affordable for American consumers;
2. Grow U.S. manufacturing and support its competitive position in the global economy;
3. Reduce America's dependence on foreign oil; and

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[36] Nucor press release, January 16, 2007, available at http://www.nucor.com/investor/news/releases/?rid=950793

[37] Center for American Progress, *American Fuel: Developing Natural Gas for Heavy Vehicles*, available at http://www.eia.gov/analysis/requests/fe/pdf/fe_lng.pdf

[38] International Energy Agency, *Are We Entering a Golden Age of Gas?*, World Energy Outlook 2011, page 22, available at http://www.iea.org/weo/docs/weo2011/WEO2011_GoldenAgeofGasReport.pdf.

4. Reduce dangerous environmental pollution.

These goals are now being advanced because natural gas supplies are abundant; prices are cheaper here than abroad; and natural gas is becoming more economical than dirtier coal and imported oil. If we keep natural gas here, these benefits will continue. If we export it abroad, we will undermine each goal.

Department of Energy
Washington, DC 20585

February 24, 2012

The Honorable Edward J. Markey
Ranking Member
Committee on Natural Resources
United States House of Representatives
2108 Rayburn House Office Building
Washington, DC 20515

Dear Representative Markey:

This is in response to your letter of January 4, 2012 concerning exports of domestically produced liquefied natural gas (LNG) and the Department of Energy's (DOE) regulation of those exports. Secretary Chu asked me to respond on behalf of the Department.

DOE's Statutory Authority

DOE's authority over exports of natural gas, including LNG, arises under section 3 of the Natural Gas Act (NGA), 15 USC 717b, and section 301(b) of the DOE Organization Act, 42 USC 7151. An amendment of section 3 in the Energy Policy Act of 1992 (EPAct 92) resulted in two different sets of standards and procedures for processing applications to export LNG from the United States, including (1) standards and procedures for the export of LNG to countries with which the United States has not entered into a free trade agreement (FTA); and (2) standards and procedures for the export of LNG to countries with which the United States has entered into an FTA providing for national treatment for trade in natural gas.

FTA Export Applications

In EPAct 92, Congress amended section 3(c) to the Natural Gas Act. At that time, Congress's attention was focused on North American trade, not on the potential impact of the amendment on United States trade with other countries overseas. Section 3(c), as amended, created a different standard of review for applications to export natural gas, including LNG, to those countries with which the United States has in effect an FTA requiring national treatment for trade in natural gas. The amended section 3(c) requires such applications to be deemed consistent with the public interest, and granted without modification or delay. DOE does not have the authority to impose conditions on the resulting authorizations. The result is a bifurcated regulatory regime over which DOE has only partial control or influence.

Non-FTA Export Applications

Applications that seek authority to export LNG to non-FTA countries and all pleadings and orders in each related proceeding are posted on DOE's website where they can be viewed by the public. Upon receipt of an application, DOE issues a notice in the *Federal Register* inviting interested persons to participate and to submit argument and evidence to support their positions. After consideration of the entire record, including evidence of the environmental impact of the proposed exports, DOE issues an order supported by substantial evidence and reasoned decision-making either granting the application in whole or in part or denying the application.

NGA Section 3(a) requires DOE to grant a request to export LNG to non-FTA countries unless, after opportunity for hearing, DOE finds that the proposed export will not be consistent with the public interest. Section 3(a) thus creates a rebuttable presumption that a proposed export is in the public interest. This means that the burden is on those that oppose the application to show that it would not be consistent with the public interest.[1]

Section 3(a) also authorizes DOE to attach terms and conditions to non-FTA export authorizations to protect the public interest. In *Sabine Pass Liquefaction, LLC*, DOE/FE Order No. 2961 (May 20, 2011) (copy enclosed), our first order authorizing exports of lower-48 domestically produced LNG to non-FTA countries, we inserted 18 ordering paragraphs containing numerous conditions and limitations to ensure that the public interest will not be harmed by the planned exports. These terms and conditions are determined on a case by case basis, but the terms and conditions applied in *Sabine Pass* are indicative of the range of factors likely to be addressed in future such orders.

To assist in our review of the pending non-FTA export applications, DOE has commissioned a two-part study by the Energy Information Administration (EIA) and a private contractor to assess the cumulative impacts of LNG exports on a number of domestic economic factors. This effort is further described below.

Pending LNG Export Applications

An increasing number of applicants are seeking authorization from DOE to export domestic supplies of natural gas as LNG to higher-priced overseas markets. DOE presently has before it seven long-term applications to export lower-48 domestically-produced LNG to countries with which the United States does not have an FTA that requires national treatment for trade in natural gas. The volume of LNG requested for export authorization in these seven applications, plus the 2.2 billion cubic feet per day (Bcf/d) already authorized for export in *Sabine Pass*, total 12.51 Bcf/d of natural gas.

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[1] If this statutory presumption were repealed, the burden would fall on the applicant to support a claim that the proposed authorization was in the public interest. The statutory presumption in section 3(a) was enacted in 1938 at a time when the technology did not exist either to liquefy natural gas and to ship it around the world or to produce natural gas by means of enhanced production technologies such as horizontal drilling and hydraulic fracturing.

Consistent with the NGA, DOE already has granted authorization to export 10.93 Bcf/d to FTA countries. The volume authorized for export in these FTA proceedings is generally duplicative of and not in addition to the volume proposed for export in the seven pending non-FTA export applications. Also, the foreign countries with currently effective FTAs do not, in general, have the ability to receive substantial quantities of LNG from seagoing vessels.

You inquired about the domestic impact of authorizing the above-stated volume of natural gas for export. Like *Sabine Pass*, the potential impact of most of these authorizations would not be imminent because the proposed exports are not planned to commence for a number of years. Also, not all authorized exports will necessarily occur because it takes years to build LNG export facilities and numerous regulatory and financial obstacles must be cleared before a project is completed.[2] Nonetheless, cognizant of the need to review the potential impact of each of the pending applications on the assumption that each project is completed, DOE has commissioned a two-part independent study, described below.

DOE's Independent Study

DOE recognized in *Sabine Pass* that the cumulative impact of *Sabine Pass* and additional future LNG export authorizations could affect the public interest. To address this issue, DOE commissioned a two-part study. The first part, a case study conducted by the EIA, primarily evaluated the potential impact of natural gas exports on domestic natural gas supply, demand, and market prices under four scenarios of export growth rates/ultimate level of exports using EIA's National Energy Modeling System (NEMS). Each scenario was evaluated against four cases from EIA's *Annual Energy Outlook 2011,* which include varying natural gas resource assumptions and economic growth rates, for a total of 16 cases. The cases present various potential export scenarios within a wide range of probabilities. We note that NEMS is not a world energy model, and does not address the interaction between the potential for additional U.S. natural gas exports and developments in world natural gas markets. EIA has completed the first part of the study, and the report is available on its website.[3] The second part of the case study will be

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[2] In addition to DOE approval, regulatory approval must also be obtained from the Federal Energy Regulatory Commission (FERC) authorizing the siting, construction, and operation of an LNG export terminal. Other agencies, such as the U.S. Coast Guard, may also review aspects of the planned export operation. With respect to building the complex liquefaction facility, several hurdles also must be cleared in the area of project financing, securing long-term agreements to market the LNG, and negotiating with a limited number of global engineering companies that have the expertise and capability to build these types of facilities. Multiple proposals to export LNG would not necessarily, by themselves, correlate to a high volume of actual LNG exports. Five U.S. LNG import terminals were built in the mid/late-2000's; these five terminals were only a small percentage of the total number of terminals originally proposed for construction.

[3] http://www.eia.gov/analysis/requests/fe/

conducted by a private contractor, and will primarily evaluate the macroeconomic impact of these sixteen hypothetical cases.

When completed, the study will provide certain insights about (1) the potential impact of additional natural gas exports on domestic energy consumption, production, and prices; (2) the cumulative impact on the U.S. economy, including the effect on gross domestic product, job creation, balance of trade; and (3) the impact on the U.S. manufacturing sector (especially energy-intensive manufacturing industries). A copy of the tasking document from DOE's Office of Fossil Energy to EIA is included as an enclosure to this letter. General guidance given to the private contractor is also included as an enclosure to this letter.

We anticipate the study will be completed by this spring. We are mindful of the need for prompt action in each of the non-FTA LNG export proceedings before us. We are equally mindful that a sound evidentiary record is essential to reach a reasoned decision in these proceedings. As such, DOE will not issue a final order addressing the pending applications to export LNG to non-FTA countries until the full study has been completed and the Department has had an opportunity to review the results.[4] I want to emphasize that no decision has been made whether to approve, limit, phase-in, or deny the presently pending or any future proposed export authorizations. Until the study is completed, reviewed, and evaluated, it would be premature for DOE to speculate on what actions we might take or the potential impacts and effects of the pending applications on many of the issues raised in your letter.

Existing LNG Export Authorizations

You asked whether DOE would ever withdraw approvals of any previously-granted LNG export authorizations, particularly in the event of a price spike in domestic prices of natural gas. As we observed in *Sabine Pass*, DOE's authority to issue supplemental orders modifying previous authorizations is contained in NGA section 3(a) and this authority may only be exercised after opportunity for hearing and for good cause shown. DOE does not, however, intend to use this authority as a price maintenance mechanism. Moreover, DOE takes very seriously the good-faith investment-backed expectations of private parties subject to its regulatory jurisdiction. Accordingly, DOE would be reluctant to withdraw or modify a previously-granted authorization, except in the event of extraordinary circumstances. To date, DOE has not had occasion to exercise this authority.

Loss of Natural Gas into the Atmosphere

You also asked whether exporting natural gas will encourage development of production that releases natural gas into the atmosphere before technologies that prevent or reduce those releases become available.

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[4]The results of the two part study will have no bearing on future DOE actions on applications to export LNG to FTA countries under NGA section 3(c).

Increased use of natural gas, using responsible production and transportation practices, will benefit the environment. Most estimates indicate that the production and use of natural gas has a lower greenhouse gas (GHG) footprint than coal or oil, the predominant alternate fuels. Therefore, insofar as natural gas offsets the consumption of coal or oil, the expanded use of natural gas will tend to reduce GHG emissions.

If you have any additional questions, please feel free to contact me or Mr. Christopher Davis, Deputy Assistant Secretary for House Affairs, at (202) 586-5450.

Sincerely,

Christopher A. Smith
Deputy Assistant Secretary
Office of Oil and Natural Gas

Enclosures

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112TH CONGRESS
2D SESSION

H. R. 4024

To suspend approval of liquefied natural gas export terminals, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

FEBRUARY 14, 2012

Mr. MARKEY introduced the following bill; which was referred to the Committee on Energy and Commerce

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A BILL

To suspend approval of liquefied natural gas export terminals, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the "North America Natural Gas Security and Consumer Protection Act".

SEC. 2. SUSPENSION OF APPROVAL OF LNG EXPORT TERMINALS.

(a) SUSPENSION.—Before January 1, 2025, the Federal Energy Regulatory Commission may not approve any

application under section 3 of the Natural Gas Act (15 U.S.C. 717b)—

(1) for the siting, construction, expansion, or operation of an LNG terminal that will be used to receive, unload, load, store, transport, gasify, liquefy, or process natural gas to be exported to a foreign country from the United States; or

(2) to amend an existing authorization of the Commission in order to modify an existing authorized facility to an LNG terminal that will be used to receive, unload, load, store, transport, gasify, liquefy, or process natural gas to be exported to a foreign country from the United States.

(b) EXEMPTIONS.—Subsection (a) shall not a apply with respect to any application described in subsection (a) if the natural gas that would be exported as a result of the approval of such application is exported solely to meet a requirement imposed pursuant to section 203 of the International Emergency Economic Powers Act (50 U.S.C. 1702), section 5(b) of the Trading with the Enemy Act (50 U.S.C. App. 5(b)), or part B of title II of the Energy Policy and Conservation Act (42 U.S.C. 6271–6276).

(c) DEFINITION OF LNG TERMINAL.—In this Act, the term "LNG terminal" has the meaning given such

term in section 2(11) of the Natural Gas Act (15 U.S.C. 717a(11)).

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112TH CONGRESS
2D SESSION

H. R. 4025

To provide that the Secretary of the Interior may accept bids on any new oil and gas leases of Federal lands (including submerged lands) only from bidders certifying that all natural gas produced pursuant to such leases shall be offered for sale only in the United States, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

FEBRUARY 14, 2012

Mr. MARKEY (for himself and Mr. HOLT) introduced the following bill; which was referred to the Committee on Natural Resources

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A BILL

To provide that the Secretary of the Interior may accept bids on any new oil and gas leases of Federal lands (including submerged lands) only from bidders certifying that all natural gas produced pursuant to such leases shall be offered for sale only in the United States, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the "Keep American Natural Gas Here Act".

SEC. 2. NO FOREIGN SALES OF NATURAL GAS PRODUCED ON FEDERAL LANDS.

The Secretary of the Interior may accept bids on any new oil and gas leases of Federal lands (including submerged lands) under the Mineral Leasing Act (30 U.S.C. 181 et seq.) or the Outer Continental Shelf Lands Act (43 U.S.C. 1331 et seq.) only from bidders certifying that all natural gas produced pursuant to such leases shall be offered for sale only in the United States.

SEC. 3. NO FOREIGN SALES OF NATURAL GAS TRANSPORTED OVER FEDERAL PIPELINE RIGHTS-OF-WAY.

Section 28(a) of the Mineral Leasing Act (30 U.S.C. 185(a)) is amended—

(1) by inserting "(1)" after "(a)"; and

(2) by adding at the end the following:

"(2) A new right-of-way for a natural gas pipeline may not be granted under this section unless the applicant for the right-of-way certifies that all natural gas that is transported via such pipeline shall be offered for sale only in the United States.".

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