TESTIMONY OF JIM COLLINS

DIRECTOR OF UNDERGROUND UTILITIES FOR

THE CITY OF HAMILTON, OHIO

ON BEHALF OF THE AMERICAN PUBLIC GAS ASSOCIATION

BEFORE THE SENATE ENERGY AND NATURAL RESOURCES COMMITTEE

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Chairman Bingaman, Ranking Member Murkowski and Members of the Committee, I appreciate this opportunity to testify before you today and I thank the Committee for calling this important hearing on market developments for U.S. natural gas and the approval process and potential for liquefied natural gas (LNG) exports. My name is Jim Collins and I am the Director of Underground Utilities for the City of Hamilton, OH. Since 1890, the City of Hamilton has provided customer-owned utility service to its residents. Hamilton is the largest natural gas municipal utility in the State of Ohio and currently serves approximately 23,000 customers.

I testify today on behalf of the American Public Gas Association (APGA). APGA is the national association for publicly-owned natural gas distribution systems. There are currently approximately 1,000 public gas systems located in 36 states. Publicly-owned gas systems are not-for-profit, retail distribution entities owned by, and accountable to, the citizens they serve. They include municipal gas distribution systems, public utility districts, county districts, and other public agencies that have natural gas distribution facilities. Public gas systems range in

size from the Philadelphia Gas Works, which serves approximately 500,000 customers, to the City of Freedom, Oklahoma, which serves some 12 customers.

As non-profit utilities, public gas systems' primary focus is on providing reliable and affordable service to their customers. As a trade association that represents public gas systems, APGA ultimately represents the interests of natural gas consumers. Our members have a vested interest in working towards long-term affordable energy prices and allowing their citizens to keep their dollars in the community as opposed to flowing upstream via high energy prices.

Overview of Policy Implications of LNG Export Issue

This Nation is at an energy policy crossroads. Today, for the first time in a very long time, gas prices are affordable and stable, as contrasted with the price volatility experienced for most of the past 20 years during which time prices for natural gas bobbed up and down from $15 to $5 to $10, with little rhyme or reason in terms of market fundamentals. Our Nation now has a unique opportunity to pursue a longstanding goal – energy independence – with optimism. Today, for the first time in almost forever, this Nation has the opportunity to be able to foresee the day when it can conduct foreign policy without being preoccupied by Middle East oil and hence Middle East politics.

Why is our Nation in this most fortuitous situation and what can we do to realize these obtainable goals?

The key reason we are in this posture is that suddenly, due to advances in technology relating to the acquisition of gas reserves from shale rock, it appears reasonable to prognosticate that the United States will not have to look abroad for natural gas supplies to supplement waning gas reserves in this country. This has obvious ramifications for natural gas policy; but even more importantly, it has huge potential ramifications for national energy policy (and therefore our national security).

Pursuing energy independence means dramatically reducing our reliance on foreign oil. The major reason accounting for oil imports into the United States is our use of oil and its derivatives in all forms of transportation – cars, trucks, busses, planes, and the like. By converting our transportation sector to reliance on alternative energy sources – including Compressed Natural Gas (CNG), electricity, hybrid vehicles using CNG or LNG, and the like – we can reduce oil imports dramatically to the point where foreign oil no longer dictates events in this country – be it foreign policy or consumer grousing about skyrocketing prices at the gas pump.

What other benefits will this Nation reap from substituting natural gas for oil products? The answer, of course, is greatly reduced CO2 emissions. Natural gas is a fossil fuel and not to be confused with renewable energy sources, but it is so far superior to oil in terms of its impact on the environment that its greater use in lieu of oil is unquestionably in the public interest. In addition, natural gas in fast-ramping power plants is essential for reliable power supply in connection with renewable resources such as wind and sun due to their intermittent nature.

What is the single greatest threat to the scenario just described? Assuming that the shale gas revolution is real, a subject we will address in our comments below, and assuming that substantial amounts of natural gas can be extracted from shale rock deep in the earth in an environmentally acceptable fashion, which seems a reasonable assumption based on experience to date, the only road block to success is that the natural gas that we should be using domestically for transportation, for power plants, not to mention enhanced residential and commercial use, is exported abroad and that we become part of a global and unstable natural gas market, just as we have with oil. What seems clear beyond cavil is that if we export significant quantities of natural gas (in the form of LNG), we will become part of an international market in order for short-term profits to be made by the affected producers and exporters. But long-term the effects will be predictable and disastrous – we will experience price increases and the price volatility of the past will return, and our opportunity to displace foreign oil will be wasted – all for short-term profits of a few. You must not permit that result; but without action by Congress that is the inevitable result of current Department of Energy (DOE) policy on LNG exports.

Natural Gas Supply

Over the past several years, technological advances in natural gas drilling techniques have made access to vast domestic natural gas reserves possible. The U.S. Energy Information Administration (EIA) 2011 Annual Energy Outlook reports that in 2010, U.S. shale gas production reached 4.87 trillion cubic feet (TCF) which equates to 23 percent of total U.S. natural gas production, compared with 0.39 TCF in 2000. This shows both the rapid growth and

absolute importance of the shale gas resource to the United States. The energy landscape of the U.S. appears to have been unquestionably and forever altered.

APGA certainly hopes that the prospects for shale gas in this country are as bright as have been painted. However, as stated by EIA, there remains "considerable uncertainty about the ultimate size of the technically and economically recoverable shale gas resource base in the onshore lower 48 States and about the amount of gas that can be recovered per well, on average, over the full extent of a shale gas formation."[1] EIA notes that some of the uncertainties associated with shale gas formations include the fact that "most shale gas wells are only a few years old, and their long-term productivity is untested" and that "[i]n emerging shale formations, gas production has been confined largely to 'sweet spots' that have the highest known production rates for the formation," which means that "[w]hen the production rates for the sweet spot are used to infer the productive potential of an entire formation, its resource potential may be overestimated."[2] Articles appearing in the national press indicate that there may be other troubling concerns at EIA about the shale gas phenomenon that are not being advertised in EIA's formal publications.[3]

In addition to the technical issues noted by EIA, there are serious environmental concerns being raised at the state and national level about the technology associated with hydraulic fracturing, now commonly known as "fracking." While these concerns do not affect EIA's projections,

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1 EIA, *Annual Energy Outlook 2011*

2 *Id.*; *see also*, Rodney White, *Professor: NY Shale Reserves May Disappoint*, Gas Daily (July 7, 2011) (reporting that Marcellus Shale gas reserves in New York may not be nearly as lucrative as already developed locations in Pennsylvania).

3 Ian Urbina, "Behind Veneer, Doubt on Future of Natural Gas," N.Y. Times, June 26, 2011; http://www.nytimes.com/2011/06/27/us/27gas.html?_r=2&hp

which are based on technical and economic data, they should not be ignored by those making policy decisions on applications that depend *entirely* for their viability on ample future natural gas from shale formations. While it is true that there has been much extreme rhetoric on both sides of the "fracking" issue,[4] there can be no doubt that the affected states and the Federal Government are taking the health-related issues seriously.[5] The outcomes of those investigations are not now known, and will not be for some period of time. Thus, to draw any policy conclusions based on the "shale gas revolution," as some call it, would be a mistake of immense proportions – especially when those decisions have the very real potential to affect our national security.

The history of the fossil fuels industry is replete with miscalculations regarding supplies. For example, not too long ago many of the corporate parents of those now pursuing LNG export predicted that the U.S. natural gas market would benefit significantly from the *import* of LNG.[6] Billions of dollars were spent on projects that are now charitably referred to as white elephants.

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[4] The newspapers are replete with articles chronicling the uncertain future of shale gas exploration. *See, e.g.,* Ian Urbina, *Regulation Lax as Gas Wells' Tainted Water Hits Rivers*, N.Y. Times Online (Feb. 26, 2011); Ian Urbina, *Wastewater Recycling No Cure-All in Gas Process*, N.Y. Times Online (March 2, 2011); Ian Urbina, *Pressure Limits Efforts to Police Drilling for Gas*, N.Y. Times Online (March 4, 2011); Darryl Fears, *Sitting Atop Huge Gas Reserve, Md. Debates Drilling Practice*, Washington Post Online (March 28, 2011); Ian Urbina, *Insiders Sound an Alarm Amid a Natural Gas Rush,* N.Y. Times (June 25, 2011). Contrary views also abound: *e.g.*, *http://johnhanger.blogspot.com/2011/06/statement-about-todays-nyt-front-page.html*.

[5] In its Fiscal Year 2010 Appropriation Conference Committee Directive to EPA, the U.S. House of Representatives ordered the EPA to conduct a study of hydraulic fracturing. That study is currently underway. Seehttp://water.epa.gov/type/groundwater/uic/class2/hydraulicfracturing/index.cfmhttp://water.epa.gov/type/groundwater/uic/class2/hydraulicfracturing/index.cfm.; On May 5, 2011, U.S. Secretary of Energy Stephen Chu impaneled a group of environmental, industry, and state regulatory experts to study and make recommendations to "improve the safety and environmental performance of natural gas hydraulic fracturing from shale formations." See http://www.energy.gov/news/10309.htm. Platt's Gas Daily for July 14, 2011, contains an article entitled "DOE Panel Questions Fracking's SDWA Exemption."

[6] *See, e.g., BG LNG Services, LLC,* Application of BG LNG Services, LLC for Long-Term Authorization to Import Liquefied Natural Gas from the Federal Republic of Nigeria, Docket No. FE 03-76-LNG (November 3, 2003) (application for import authority through the Lake Charles LNG terminal related to 20-year LNG purchase agreement).

In addition, the nation's first LNG export facility in Kenai, Alaska is slated to terminate exports sooner than expected because drilling activity in Alaska's Cook Inlet has not offset declines in production rates, making it unfeasible to continue LNG exports.[7]

If the U.S. has less recoverable gas than projected, it certainly should not exacerbate the situation by approving export applications premised on a domestic over-supply. Additionally, lower than projected amounts of recoverable gas would worsen exponentially the risks inherent in tying U.S. natural gas prices to volatile international markets.

LNG Export

To date, five applications for the export of LNG have been filed DOE. Applications have been filed by Sabine Pass and Lake Charles Exports in Louisiana and by Freeport LNG in Texas. More recently, we have seen an application filed for Dominion in Cove Point, MD. A fifth, Jordan Cove Energy Project, Oregon has yet to be published in the Federal Register. Some of these applications have already been granted and many more are expected to be filed.

Just the volumes enumerated in these few applications would make the United States the second largest exporter of LNG in the world. These five applications, if granted by DOE, would permit the export of just under 3 TCF of natural gas, which represents over 10% of our consumption on

[7] Isabel Ordonez, *Conoco to Stop LNG Exports from Kenai Plant in Alaska*, Wall Street Journal Online (Feb. 10, 2011).

an annual basis. This level of export would have serious adverse implications not only for domestic consumers of natural gas but also for U.S. national security.

When applications are filed at DOE, there is a public interest test that must be met – but not by the applicants. In cases where the application is specific to identified countries with which the U.S. has a free trade agreement, the application is deemed to be consistent with the public interest and granted without modification or delay. In cases where an application is seeking exportation of LNG to countries with which the U.S. does not have free trade agreements, the burden is on those ***opposed*** to the application to demonstrate that the application is not consistent with the public interest. The structure of this process under which opponents of an export must prove a negative is counter-intuitive on its face and makes it extremely difficult, if not impossible, for opponents to defeat an application for the export of LNG. APGA supports the passage of legislation that places the burden of proof where it should be, on the applicant to demonstrate to DOE how the approval of that application is in the public interest.

It is also important to note that shale gas formations are not unique to the United States – this is not a U.S. phenomenon; it is a world-wide phenomenon.[8] The State Department launched the

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8 E.g., "Shale Gas: Global Game Changer," by Dallas Parker, *Oil and Gas Financial Journal* (Feb. 8, 2011), http://www.ogfj.com/index/article-tools-template/_printArticle/articles/oil-gas-financial-journal/unconventional/shale-gas__global.html; "Worldwide Gas Shales and Unconventional Gas: A Status Report," Vello A. Kuuskra and Scott A. Stevens ("The final segment of this "paradigm shift" - - the worldwide pursuit of gas shales and unconventional gas - - has only just begun, with Australia, China and Europe in the lead. Europe's gas shale geology is challenging, but its resource endowment and potential are large.") http://www.rpsea.org/attachments/articles/239/KuuskraaHandoutPaperExpandedPresentWorldwideGasShalesPresentation.pdf. Debajyoti Chakraborty, *Asia's First Shale Gas Pool Found Near Durgapur*, Times of India Online, (January 26, 2011); Hillary Heuler, *Shale Gas in Poland Sparks Hope of Wealth, Energy Security*, Voice of America Online (June 11, 2011) (Reporting on efforts by U.S. and other western gas companies to develop gas from shale deposits). "The Shale Gas Run Spreads Worldwide," by Mark Summor IPS, Deccan Herald (Aug. 1, 2011)(" Recent discoveries of deeply buried oil shale layers containing natural gas or oil are

Global Shale Gas Initiative ("GSGI") in April 2010 in order to help countries identify and develop their unconventional natural gas resources.[9] To date, partnerships under GSGI have been announced with China, Jordan, India, and Poland.[10] The big energy players, including ExxonMobil, Chevron, Shell, BP, etc. are spending billions world-wide to pursue shale gas plays.[11] The point to be made, of course, is that the United States, which is at the forefront technologically of the development of shale gas reserves, should be exporting its technology and expertise – not spending billions of dollars to build facilities in order to export a commodity that can play such a vital role in contributing to our national well-being and that also may be abundant world-wide before the LNG export facilities can even be completed.

Impact on Consumers

U.S. natural gas prices are now among the lowest in the developed world. The large-scale export of natural gas via LNG will play havoc with the current supply/demand situation and hence the

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being reported in Australia, Canada, Venezuela, Russia, Ukraine, Poland, France, India, China, North Africa and the Middle East. Taken together, say some energy analysts, these 'plays' could become a game-changer, making Australia and Canada into new Saudi Arabias.").

[9] See http://www.state.gov/s/ciea/gsgi/

[10] *Id. see also*, Rakteem Katakey, *India Signs Accord with US to Assess Shale-Gas Reserves*, Bloomberg News (November 8, 2010) (The US signed a memorandum of understanding with India to help it asses its shale gas reserves and prepare for its first shale gas auction at the end of this year.); Kate Andersen Brower and Catherine Dodge, *Obama Says US, Poland Will Cooperate on Economy, Energy*, Bloomberg News (May 28, 2011) (Reporting on President Obama's pledge to share U.S. shale gas extraction expertise and technology on a recent trip to Warsaw); *see also*, *Energy in Poland: Fracking Heaven*, The Economist (June 23, 2011).

[11] "Big Oil Betting on Shale Gas," by Ken Silverstein, *EnergyBiz* (July 31, 2011)

price of natural gas. Even supporters of LNG exports acknowledge that such exports will increase prices and price volatility in the domestic natural gas market.[12]

Exporting domestically produced LNG will tie U.S. natural gas prices to international markets that, today, yesterday and likely for the foreseeable future, will demand higher prices and undermine current domestic natural gas price stability. In Europe and Asia, natural gas markets are less liquid and prices are higher and often indexed to international oil markets, which are substantially more volatile and less transparent than our domestic market. Exporting domestically produced natural gas from the United States in any real quantities will link domestic commodity prices to international fluctuations.

The current domestic natural gas market is competitive, liquid and transparent while simultaneously, since it is a North American market, less susceptible to unstable regimes, rapacious cartels, and distant events than foreign natural gas markets, which are tied to the global energy market.[13] At present, the U.S. natural gas market benefits from the security and political stability in North America. United States policymakers should act to preserve rather than undermine the stability of domestic commodity markets

[12] *See, e.g.*, The BWMQ Energy Advisory, Volume 7, Issue 1 dated October 2011 (at page 4): "As we return to the world market, consumers will have to pay the higher world price because that is the minimum price that U.S. producers can get by offering their entire supply to the world market. The higher price will also increase price volatility. More exports will result in a tightening of domestic natural gas supplies in the future."

[13] *See* IFandP Newsroom, *Commodities: Oil Price Volatility Up On Libya Rumours, US Natural Gas Continues its Slide*, Industrial Fuels and Power Online (March 3, 2011) (reporting on rising prices and volatility in the international market for crude oil and unperturbed, declining prices for domestic natural gas).

In addition to tying U.S. natural gas prices to international volatility, LNG exports would inflate demand and prices by forcing U.S. consumers to compete with end-users in other nations that are required to pay more for natural gas. This would incontrovertibly increase the price for natural gas in the domestic market, especially in times of supply shortfall and further undermine efforts to maintain domestic gas prices at competitive levels.

Job Creation

Because of the high unemployment rate in this country today, some LNG export advocates argue that their projects are in the public interest because they will create jobs. However, what we should be looking for is real, durable job growth in the transportation sector due to infrastructure construction and related activities, rather than ephemeral job growth in a sector (LNG exports) that will likely disappear overnight when foreign countries begin to exploit their own shale gas reserves, making our LNG export facilities as useless as our LNG import facilities.

APGA respectfully submits that any national plan for durable job growth prioritize investment in domestic use of natural gas in the U.S. transportation fleet and in electric power generation. The U.S. transportation fleet is almost wholly dependent upon petroleum, which imperils our energy and national security. APGA submits that domestic investment in transforming our transportation fleet to Compressed Natural Gas (CNG) vehicles will provide significant job creation while also improving our national security.

Congress needs to look no further than legislation that has already been introduced in the House of Representatives to see the job creation potential of CNG vehicles: the New Alternative to Give Americans Solutions Act (NAT GAS Act), H.R. 1380. This bipartisan proposal introduced by Representatives Sullivan (R-OK), Boren (D-OK), Larson (D-CT), and Brady (R-TX) targets the replacement of the heavy-duty vehicle fleet by offering tax credits (for five years) for alternative fuel infrastructure installation, alternative fuel vehicle purchases, and alternative fuel credits, as well as other incentives. According to the bill's sponsors, this legislation has the potential to create 500,000 new jobs over the life of the legislation. It is important to note that this legislation targets only one subsector of one application of natural gas in the United States. The fact that this legislation could create half a million jobs in just one subsector, is indicative of the broad job creation potential of all applications of natural gas from vehicles to generation.

Energy Security

A government that has the pursuit of energy independence as its declared national policy should not authorize exportation of a valuable commodity whose value at home is incalculable and whose supply is unknown with any degree of certainty at this point in time. Policymakers should seize this window of opportunity to implement our long-declared (but never seriously pursued) policy of striving towards energy independence. The pursuit of energy independence requires that the United States wean itself off of imported oil, which accounts for approximately 50% of our domestic use.

The two major consumers of foreign oil in the United States are the transportation sector and the industrial sector. Instead of exporting domestic natural gas, the United States should maximize its use domestically in order to displace the current reliance on imported petroleum products and on carbon-intensive coal. For instance, as the Secretary of Energy has made crystal clear, domestic natural gas should play a much larger role as a transportation fuel.[14] Currently, the U.S. imports billions of dollars worth of oil from around the globe, a great deal of which is used for gasoline to fuel vehicles. The replacement of current gasoline-powered fleets with natural gas vehicles (and support infrastructure) would significantly reduce U.S. dependence on foreign oil, and thereby enhance U.S. security and strategic interests and reduce our trade deficit.

Policymakers should also encourage the direct use of natural gas for residential and commercial end uses such as space heating, water heating, and the like where the greater efficiency and lower emissions of natural gas (on a source to site basis) has been amply demonstrated.[15]

Given its clean burning nature, it is logical to assume that natural gas will also play a role in distributed and other power generation to decrease reliance on coal and complement clean, albeit intermittent, energy sources such as wind and solar. APGA observes that most electric generation built since 2000 is fueled with natural gas, and the EIA projects that most new electric

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[14] "The most direct way to reduce our dependency on foreign oil is to simply use less of it, starting with the cars and trucks we drive. Nearly 70 percent of our oil use is for transportation, and more than 65 percent of that amount is for personal vehicles... energy independence means changing how we power our cars and trucks from foreign oil to new American-made fuels and batteries." Nobel Physicist Steven Chu, U.S. Secretary of Energy, *Pulling the Plug on Oil*, Newsweek, April 4, 2009.

[15] *Review of Site (Point-of-Use) and Full-Fuel-Cycle Measurement Approaches to DOE/EERE Building Appliance and Energy Efficiency Standards*, National Academies of Sciences (May 27, 2009) available at http://www.nap.edu/catalog.php?record_id=12670.

generation plants will be fueled by natural gas,[16] which has obvious significance for the demand for natural gas in the immediate and long-term future. Finally, APGA observes that increased use of natural gas domestically in lieu of oil imports will benefit the U.S. economy by reducing our trade deficit.[17]

However, to accomplish our goal of energy independence, natural gas in the United States must remain plentiful and reasonably priced. Today U.S. consumers enjoy natural gas prices that are the product of both the new available supplies of natural gas and the fact that our natural gas market is largely limited to North America. If this trend is permitted to continue, then there is light at the end of the energy independence tunnel. The export of large quantities of domestic gas threatens our ability to obtain this goal because the key to greater use of natural gas in all sectors is that it remains affordable and avoids the volatility pitfalls of the past. That will only happen if we remain de-linked from the international market. We know that from experience; we should learn from that experience. The cost of ignoring that experience will be a lost opportunity to advance this Nation's essential energy independence and national security goals.

Conclusion

[16] EIA, *Annual Energy Outlook 2011* at 41 (Finding that in each cost scenario considered by the EIA, the majority of new electric generation capacity will be natural gas-fired.); *see also*, Mark Watson, *Gas Generation to Double by 2020: Report*, Electric Power Daily (July 12, 2011) (Reporting on an ICF International forecast that coal plant retirements, increased reliance on intermittent power sources, and the availability of shale gas will cause gas-fired electric generation to more than double between 2010 and 2030).

[17] For example, as recently reported, "[t]he trade deficit in the U.S. widened in May to the highest level in almost three years, reflecting a surge in the cost of imported crude oil. The gap grew 15 percent to $50.2 billion, exceeding all forecasts of 73 economists surveyed by Bloomberg News and the biggest since October 2008, Commerce Department figures showed today in Washington." Alex Kowalski, *Trade Deficit of US Unexpectedly Surges on Increase in Crude-Oil Imports*, Bloomberg News, (July 12, 2011).

APGA is not against free trade, but when important policies collide, nations must make choices. U.S. policymakers must carefully consider and prioritize the use of domestic resources according to the national interest over both the short and long-terms. APGA submits that the decision to export LNG should be thoroughly vetted in the context of a national energy policy, and the wise policy choice by our elected officials, at this critical time in our history, is to limit exports of natural gas so that we may realistically pursue the greater goal of energy independence. Those who argue that this matter is not an either-or situation are wagering our long-term national well-being on short-term profits. We urge the Committee to carefully consider the adverse impact that exporting LNG will have on millions of homes and natural gas consumers in the U.S. who will feel the impact of higher prices resulting from exposure to the global export market. We thank you for the opportunity to submit testimony and look forward to working with the Committee on this important issue.