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Testimony on

“Trade Implication of U.S. Energy Policy and the Export of Liquefied Natural Gas (LNG)”

Committee on Ways and Means
Subcommittee on Trade

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Chairman Nunes, ranking member Rangel, and members of the Trade Subcommittee: thank you for the opportunity to testify on the “Trade Implications of U.S. Energy Policy and the Export of Liquefied Natural Gas (LNG).” The question has taken on greater urgency this winter due to an increase in domestic natural gas consumption, the approval of seven LNG export applications, and Russia’s rattling its natural gas sabre to intimidate Ukraine.¹

I plan to address several fundamental questions today.

- What criteria should the Department of Energy use to evaluate whether a proposed LNG export project is in the public interest?
- Are there cost-effective measures that the United States can undertake that would save natural gas, create jobs, and reduce pollution?
- Is elimination of the public interest test for LNG export facilities an effective policy to assist Ukraine or other nations threatened by potential high natural gas prices or supply reductions?

MEETING THE PUBLIC INTEREST STANDARD

In the past six years, the United States experienced a dramatic increase in natural gas production, primarily from “shale gas” generated from improvements in “hydraulic fracturing” (or fracking) and horizontal drilling.²

Under the Natural Gas Act, the Federal Energy Regulatory Commission (FERC) must approve a proposed LNG export or import terminal. For projects that will export gas to one of the 18 nations with a Free Trade Agreement with the U.S., the projects are automatically deemed “with the public interest.”³ These 18 nations include Canada, Mexico, and the Republic of Korea.⁴

For nations that do not have a Free Trade Agreement with the U.S., the Department of Energy (DOE) must determine whether the “proposed exportation or importation will not be consistent with the public interest,” as required by Section 3(a) of the Natural Gas Act.⁵ Deputy Assistant Secretary of Energy Paula Gant recently testified before the House Subcommittee on Energy and Power that

DOE/FE [Office of Fossil Energy] has identified a range of factors that it evaluates when reviewing an application for export authorization. These factors include economic impacts, international considerations, U.S. energy security, and environmental considerations, among others.⁶

Under these criteria, DOE has approved seven LNG export applications. The Sabine Pass facility in Louisiana is the first one under construction.⁷ Its completion could occur in the fourth quarter of 2015.⁸

NATIONAL INTEREST DETERMINATION

In our view, it is essential that before DOE finds that any more LNG export terminals are in the public interest, it must include the following criteria in its public interest evaluation.

- What is the impact of additional LNG exports on natural gas prices and electricity costs?
- What impact would higher natural gas prices have on U.S. manufacturing?
- Most studies predict that more LNG exports would increase shale gas production. What impact will that have on the climate?
- Can we enhance energy security with means other than drilling or fracking?

Large LNG exports possible by 2020, leading to a natural gas price hike

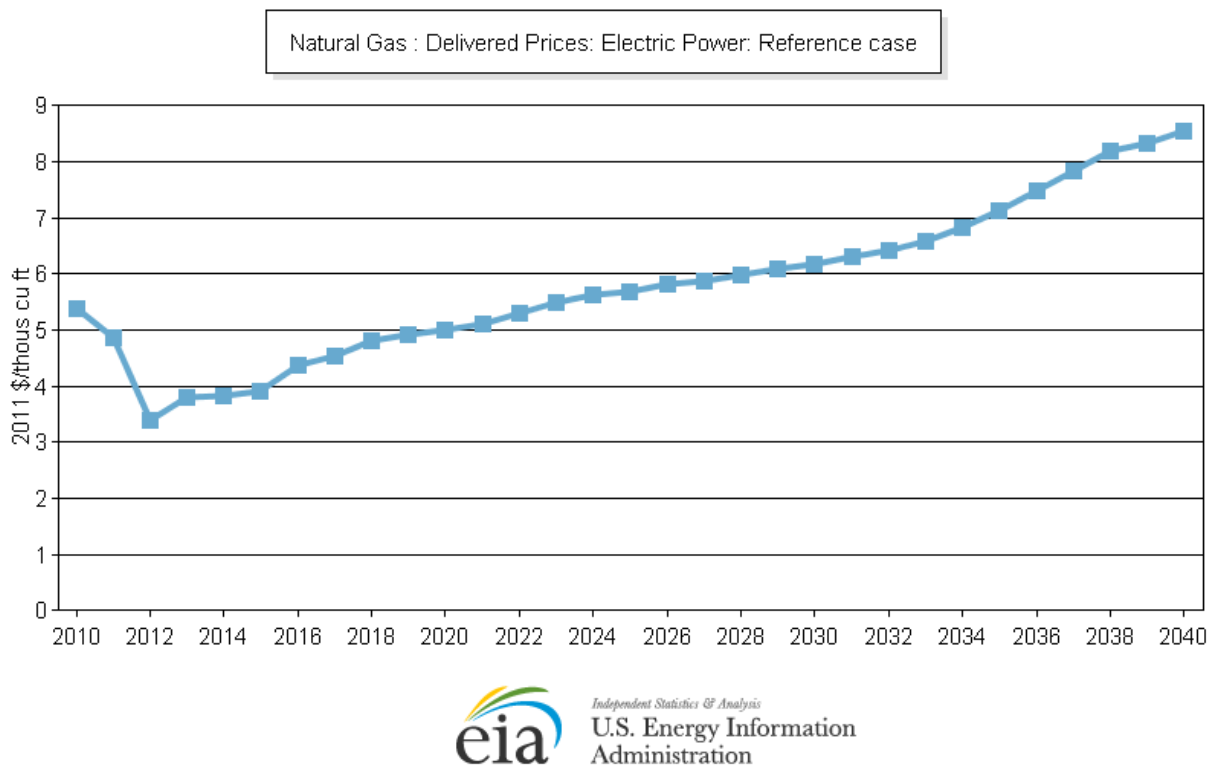
Before Congress passes legislation to accelerate or eliminate the public interest review process, it is essential to note that DOE has already approved LNG terminals that could that could export 13 billion cubic feet per day (Bcf/d) of natural gas – about 18 percent of total domestic production projected in 2020.^{9 10} The Energy Information Administration (EIA) notes that LNG exports will increase by 14-fold between 2013 and 2020 under a “business as usual” scenario.¹¹ There would be another four fold increase in exports between 2020 and 2030.¹²

Under these projections, the cost of natural gas for domestic electricity generation would rise by 32 percent between 2013 and 2020 according to EIA.¹³ And the price would nearly double between 2013 and 2030.¹⁴

EIA also found that natural gas exports will increase gas prices.

Increased natural gas exports lead to increased natural gas prices. Larger export levels lead to larger domestic price increases, while rapid increases in export levels lead to large initial price increases that moderate somewhat in a few years. Slower increases in export levels lead to more gradual price increases but eventually produce higher average prices during the decade between 2025 and 2035.¹⁵

A price increase could have severe impacts on family budgets. EIA reports that the typical household spent an average of nearly \$2,000 – or 2.7 percent of their household income – on household energy fuels in 2012.¹⁶ The households in the lowest fifth income bracket spent double this portion -- 6 percent -- on household fuels.¹⁷



Higher natural gas prices could hurt manufacturing

Lower natural gas prices have fueled the recent increase in U.S. manufacturing. *Fuel Fix*, a Hearst energy publication, reported in March that

An ample supply of cheap natural gas has ignited a U.S. manufacturing surge projected to expand plant payrolls and drive demand for chemicals, machinery and steel through the end of the decade, according to a report released Thursday.

Sinking natural gas prices...are linked to more than 196,000 new manufacturing jobs in major metropolitan areas and a \$124 billion boost to sales for energy-intensive products like fabricated metals and plastics, according to a U.S. Conference of Mayors report on the nation's industrial growth.¹⁸

This growth is at risk if more LNG exports boost natural gas prices, as studies indicate. According to EIA, the industrial sector, which includes manufacturers that use natural gas as a feedstock, would experience a 28 percent price increase in direct natural gas costs between 2013 and 2020.¹⁹ The price boost would be more than a 50 percent increase between 2013 and 2030.²⁰ LNG exports could reduce net job creation compared to using this gas for domestic manufacturing.

A study commissioned by the Dow Chemical Company – an opponent of greater LNG exports – found that a

Comparison of the effects of the manufacturing sector using 5 Bcf/d of natural gas versus LNG terminals exporting 5 Bcf/d of natural gas...clearly shows **higher...employment related to the manufacturing investments.**

This is primarily driven by the higher level of investment required to manufacture products using the natural gas than to export it. Natural gas use of 5 Bcf/d in the manufacturing sector requires more than \$90 billion in investments and significant annual spending, while LNG export terminals with 5 Bcf/d of capacity would involve only \$20 billion in new investment.²¹

The NERA study on LNG exports commissioned by DOE determined that the expansion of LNG exports would provide net economic benefit to the economy.

In all of these cases, benefits that come from export expansion would more than outweigh the costs of faster increases in natural gas production and slower growth in natural gas demand, so that LNG exports have net economic benefits in spite of higher domestic natural gas prices.²²

The study also concluded that higher natural gas prices from LNG exports would hurt manufacturing employment. It determined that

Higher natural gas prices in 2015 can also be expected to have negative effects on output and employment, particularly in sectors that make intensive use of natural gas.

The manufacturing sector [is] dependent on natural gas as a fuel and [is] therefore vulnerable to natural gas price increases.²³

Increase in LNG exports could increase climate pollution

It is irresponsible to discuss energy policies without consideration of their impact on the climate. There was another 10 alarm warning on March 30, when the Intergovernmental Panel on Climate Change (IPCC), the world's largest deliberative body of scientific study devoted to climate change, released its latest report "Impacts, Adaptation, and Vulnerability."²⁴ In its strongest language to date the report warns that

Impacts from recent climate-related extremes, such as heat waves, droughts, floods, cyclones, and wildfires, reveal significant vulnerability and exposure of some ecosystems and many human systems to current climate variability.²⁵

The New York Times noted that the report warned that

"Throughout the 21st century, climate-change impacts are projected to slow down economic growth, make poverty reduction more difficult, further erode food security, and

prolong existing and create new poverty traps, the latter particularly in urban areas and emerging hot spots of hunger,” the report declared.²⁶

In the United States, climate related events exact a huge human and economic toll. Examples of these costs include the scorching California drought, record floods in Colorado, and a deadly wildfire season just ahead. Nationwide, in the past three years, there were 32 extreme weather events that each caused \$1 billion or more in damage.²⁷ Together, these events took 1,221 lives and caused nearly \$210 billion in destruction.²⁸

So DOE must assess the potential impact of LNG exports on the potential increase of climate pollution. It’s well documented that fracking to produce shale gas generates fugitive methane, which is the main component of natural gas.²⁹ Methane is a potent climate pollutant, which has 86 times more warming potential than carbon dioxide pollution over a 20 year period.³⁰ This means that significant emissions in the near future could spur much more climate change, extreme weather, and other harmful impacts.³¹ Oil and gas production is the second largest source of domestic methane pollution, responsible for nearly 30 percent of it.³²

The administration’s recently released “Climate Action Plan Strategy to Reduce Methane Emissions” noted that “methane equivalent to 127 million tons of carbon dioxide pollution was emitted from production, processing, transmission, storage, and distribution of natural gas” in 2012.³³

If LNG exports drive an increase in natural gas production, this could also spark growth in methane pollution. This concern recently led the EPA to urge the Federal Energy Regulatory Commission (FERC) “to consider greenhouse gas impacts from increased U.S. natural gas drilling in its environmental review of a natural gas export terminal in Louisiana.”³⁴

DOE, too, must also assess the potential increase in methane pollution when reviewing pending LNG export terminal applications. This evaluation should factor in the *cumulative* increase in natural gas production from all of the LNG export terminals already approved, as well as the impact from the individual applicant.

The U.S. must significantly reduce its methane releases to meet the 2020 climate pollution reduction goal. Later this year, the EPA will release its methane reduction plan for the oil and gas sector, which should include cost-effective limits on this pollutant.³⁵ This reduction regime must be promptly implemented in the oil and gas fields to avoid further exacerbating climate change. Ignoring the potential increase in methane pollution from future LNG exports won’t make climate change go away – it will only make its impacts more deadly, destructive, and expensive.

Save natural gas, create jobs, cut pollution

One way to reduce the threat of higher nature gas production, prices, and pollution linked to an increase in LNG exports is to make our natural gas distribution system much more efficient. A report by Sen. Ed Markey, “America Pays for Gas Leaks,” estimated that the aging network of natural gas pipelines leak significant amounts of natural gas.³⁶ It determined that

Gas distribution companies in 2011 reported releasing 69 billion cubic feet of natural gas to the atmosphere, almost enough to meet the state of Maine's gas needs for a year and equal to the annual carbon dioxide emissions of about six million automobiles.

Gas companies have little incentive to replace these leaky pipes, which span about 91,000 miles across 46 states because they are able to pass along the cost of lost gas to consumers. Nationally, consumers paid at least \$20 billion from 2000 -2011 for gas that was unaccounted for and never used according to analysis performed for this report.³⁷

Fortunately, ranking member Rangel introduced legislation that would begin to plug these leaks. His bill "The Pipeline Modernization and Consumer Protection Act," H.R. 4338 would "require gas pipeline facilities to accelerate the repair rehabilitation and replacement of high-risk pipelines."³⁸ Companies would develop a priority list of their pipelines that pose the most risk, and adopt a cost-recovery program to pay to repair them.³⁹

Rep. Rangel has another bill to create the "Pipeline Revolving Fund and Job Creation Act," H.R. 4339.⁴⁰ This bill would provide "grants to states to establish [revolving] loan funds," with each state providing 20 percent of the money in its fund.⁴¹ It would last for ten years.

Together, these bills would begin to plug natural gas pipeline leaks, create jobs for workers to repair them, save consumers money due to less wasted gas, and cut climate pollution. Most importantly, they would identify and repair the most hazardous pipelines to reduce the likelihood of another tragic gas explosion, such as the one in Harlem last month.

Companion bills were introduced in the Senate by Sen. Ed Markey, and have broad support from organizations including the United Steelworkers, Consumers Union, New England Gas Workers Association, United Association of Plumbers and Pipefitters, and other interests.

EFFICIENCY CAN HELP UKRAINE REDUCE DEPENDENCE ON RUSSIAN GAS

Russia continues to ratchet up its threat to Ukraine, which the United States and other nations must respond to by imposing costs on Russia and assisting Ukraine. Russia hopes to exploit Ukrainian dependence on its natural gas to dominate this independent nation. In 2012, Ukraine produced only 37 percent of its own gas, and imported the remainder from Russia.⁴² Even though Russia underpriced this gas, Ukraine still owes the Russian gas company Gazprom over \$2 billion.⁴³

The *Washington Post* recently reported that

Many members of Congress are pressing the Obama administration to use energy as a diplomatic weapon and to speed permits for natural gas export terminals to ease Europe's and Ukraine's heavy reliance on Russian supplies.⁴⁴

Some members introduced legislation to fast track approval of additional LNG export facilities by eliminating or truncating DOE's public interest review of proposed projects.⁴⁵

Approval of more LNG exports could further hike natural gas prices and pollution, but do little to help Ukraine. The Sabine Pass LNG facility is nearest to completion, and its finish date is at least a year and a half away.⁴⁶ *The New York Times* notes that “half of the gas that will leave [the] facility has already been contracted by India and South Korea. The other half will go to British and Spanish companies.”⁴⁷

None of the other approved LNG terminals have even begun construction. The *Post* notes that LNG exports to Ukraine could not occur until “years from now. The earliest gas exports won’t come until late 2015 or 2016, and most won’t get started until 2017 through 2019.”⁴⁸

Oil executives understand that the approval, construction and operation of LNG export terminals takes time. *The Times* reported

“L.N.G. exports are not about snapping your fingers and making them happen,” said Marvin E. Odum, president of the Shell Oil Company, which has partnered with Kinder Morgan in a proposed export terminal in Georgia that is awaiting regulatory approval. “These are large business development projects that take several years of construction and several years of business development and engineering design.”⁴⁹

The Times concluded that “the United States can offer little hope for Europeans eager to diversify their gas sources as Russia occupies Crimea and may threaten other parts of eastern Ukraine.”⁵⁰

The bottom line: rushing to approve more LNG export terminals would provide no short term relief for embattled Ukraine.

There is another option that could more quickly provide some relief. Ukraine wastes huge amounts of energy. It is the second least energy efficient economy based on the consumption of fuels per unit of GDP, according to the Enerdata “Global Energy Statistical Yearbook 2013.”⁵¹

A report by the International Energy Agency, “Ukraine 2012,” described the nation as one with “high energy intensity and poor efficiency.”⁵² It found that

Energy-intensive industries are crippled by ageing capital stock throughout the energy supply chain. District heating systems that supply half of the heat used in industry and space heating to some 55% of households are in dire need of refurbishment... The building stock is poor quality. Attracting investments to modernise assets and improve energy efficiency is a key challenge.⁵³

Carl Pope, former chair of Sierra Club, recently proposed that the U.S. should assist Ukraine with the reduction of wasted energy rather than speed the approval of LNG terminals.

Help Ukraine slash its outlandish waste of imported gas. Ukraine uses four times as much energy for every unit of value produced as Germany does... Becoming as efficient as Poland would effectively cut the cost of gas in Ukraine by two-thirds.⁵⁴

The “Ukraine 2012” report recommended this approach two years ago, long before the latest threat from Russia.

More emphasis on efficiency and demand-side measures, where the potential savings are large and could be achieved at relatively low cost – certainly in comparison with building new energy production and delivery assets – would help to reduce import dependence, mitigate the impact of rising energy prices and develop a service portion of the economy that can create jobs and stimulate growth.⁵⁵

The U.S. Agency for International Development (USAID) launched the “Municipal Heating Reform Project,” (MHR) in 2009, which is designed to accomplish these goals.⁵⁶ The project “selected 38 cities...for the implementation of project activities and energy efficiency demonstration projects.”⁵⁷ There were efforts in these cities to conduct

Municipal energy assessments, development of municipal energy plans, development of legal and technical specifications for metering equipment, implementation of energy efficient technologies, and monitoring results.⁵⁸

By 2013 the project achieved substantial results. For instance, through 2012 “on average, the implementation of heat metering and control systems resulted in 18.7 % savings,” according to an Alliance to Save Energy draft report.⁵⁹

Engility, a USAID contractor on the MHR project, noted that it leveraged USAID’s investment to achieve the following significant energy, financial, and pollution savings, including:

- 380 million cubic meters of natural gas saved;
- \$225 million leveraged for energy efficiency projects;
- 676,000 tons CO2 emissions reduction;
- Independent Communal Services Regulatory Authority established;
- 25 Municipal Energy Plans with appropriate local budget support;
- 5 Regional Training Centers established;
- 34 energy efficiency/improved heating demonstration projects;
- 3,160 people (including 1,760 women) directly trained in Energy Efficiency subjects; and,
- 540,000 people directly positively affected by project EE-related activities.⁶⁰

The MHR project was relatively inexpensive. The first three years cost a total of \$15 million.⁶¹ It received another \$13.5 million in September 2013.⁶² This small investment has significant benefits.

Rather than eliminate or truncate reviews of proposed LNG export facilities, the U.S. could help Ukraine launch a massive mobilization to retrofit its apartment and government buildings to slash energy waste. This could include replacement of inefficient furnaces and compressors with highly efficient American made models. This would reduce Ukrainian purchases of Russian gas,

and create jobs both in Ukraine and the U.S. And like Rep. Rangel's pipeline repair bill, these efforts would cut harmful methane emissions that worsen climate change.

CONCLUSION

The huge increase in domestic shale gas production provides many benefits to the United States, including a home grown, cleaner cheaper fuel for electricity generation, and more jobs in the oil and gas industry. We must also ensure that there are strict enforceable limits on the emission of methane and other air and water pollution produced from the production, transmission and combustion of natural gas.

Likewise, the approval of additional LNG export applications should occur only if they do not cause electricity price spikes that would harm families and business budgets, or impair the recent manufacturing renaissance. And such exports must help reduce – rather than increase – climate pollution. The cheapest, fastest, most economically beneficial method to meet energy needs in the U.S. or Ukraine is to launch massive energy efficiency programs to capture fugitive methane, plug leaky pipes, reduce building energy use, and reduce other sources of waste. This would provide much quicker assistance to Ukraine than eliminating public interest reviews of future LNG export projects.

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