

Mike Reuter

I am speaking here as an individual and not as the Mayor of Kalama.

This methanol refinery is a way for Canada to be able to export natural gas to world markets and will cause catastrophic higher energy costs to the NW consumers and businesses by possibly paying 2/3 more for natural gas.

This article below shows Northwest Innovation Works is using this methanol for fuel and how this project is just a way to monetize and release large amounts of stranded Canadian natural gas. I have also enclosed a document showing that exporting natural gas benefits only a small and narrow portion of the U.S. economy, and not in the interest of the public (consumers and economy at large).

Liquid-rich gas production: An imperative opportunity for Canada
13 Feb 2018 Mary Hemmingsen, EVP and CFO, Northwest Innovation Works

When it comes to gas monetisation, Canada is looking for new approaches to remain competitive against the mature exporting markets. NorthWest Innovation Works is a multi-national partnership, committed to meeting the global need of a cleaner source for methanol production. This new technology will not only reduce the global carbon footprint but also introduce new gas monetisation techniques to Canada.

Ahead of the Canada Gas and LNG Conference and Exhibition, 14-16 May, Gastech Insights spoke with Executive Advisory Board Member and Executive Vice President & CFO at NorthWest Innovation Works, Mary Hemmingsen, to discover more about the organisation and what these new opportunities mean for Canada's gas industry.

Gastech Insights: NW Innovation Works is committed to meeting a global need for clean-burning liquid fuels and clean feedstock for petrochemical industry. Can you tell us more about methanol as a clean and versatile energy carrier?

Mary Hemmingsen: Methanol's versatility leads to many important applications as a clean and multipurpose fuel and feedstock: in marine and ground transport, power, heat and petrochemical applications. Adding to this versatility, methanol exists as a clear liquid form in ambient conditions, that is water soluble and biodegradable, ensuring easier and safer shipping and distribution.

Methanol demand is expected to increase steadily through 2035, in part, driven by increasing MTO demand with low-cost gas-based manufactured methanol that is more competitive to coal-based methanol. This rapid rise in MTO is led by China, driven by opportunities in the value chain and for improved environmental performance. Among the fuel applications being expanded is the:

- Marine Sector: Currently consumes 370 million metric tonnes of bunker fuel per annum. IMO standards on SOX & NOX emissions are required to be met by 2020 with methanol poised to capture at least 20% of this market based on methanol's attributes of cost-effective lower emission output.

- **Ground Transportation Fuel:** China, with others following, is leading the growing utilization of methanol as a clean fuel for transportation. Methanol standards have already been implemented in 14 Chinese Provinces mandating methanol blending, and are being implemented in additional Provinces.
- **Small Mid-Boiler Market:** In China, over 600,000 small to medium size industrial boilers consume approximately 700 million metric tons of coal per year or 18% of China's coal consumption. The opportunity to vastly improve environmental performance has motivated the Chinese government to phase out all coal-fired boilers with the capacity of 35 tonnes/hour or less by 2020, creating a corresponding conversion opportunity to methanol-fired boilers on the heels of currently converted boiler units which consume about 1 MTPA of methanol.

Gastech Insights: What monetisation opportunities can the methanol markets sector offer Canadian gas producers and what work needs to be done to ensure these opportunities are realised?

Mary Hemmingsen: Canada needs to realize the first-mover opportunity and accelerate aggressive efforts to capture new high value-add methanol markets in scale development. Leveraging our low-cost natural gas and advantaged gateway to a new growing clean Asian methanol economy, we need to crack the barrier of pipeline access and relentlessly focus our efforts to deliver a cost competitive advantage. Scale development and scale economics using between 1 to 2 bcf of gas would support at least two facilities of up to 28 MTPA of manufactured methanol and would capture a portion of the identified and looming methanol demand.

We need to act on the investment in related development already made in modularized construction and of interested host First Nations. This includes formalizing investments and the sharing of investment, costs and/or corridors for pipelines as well as providing various fiscal support arrangements and removing pipeline and other costs and delay barriers such as import duties and prolonged regulatory process, based on the high value-add for Western Canada and Canada as a whole.

We need to invest as a coordinated industry value chain and supply chain, relentlessly focused on cost competitiveness to be first to this new market. In doing so we can capture both a rapid step function increase in Asian methanol demand toward improved environmental performance and provide a supporting platform for other gas exports including Natural Gas Liquids (NGL) and LNG.

Gastech Insights: How can the industry harness the potential of liquid-rich gas successfully – allowing NGLs to turn from a hindrance to a help for Canadian shale producers?

Mary Hemmingsen: Recognizing the increasing "hotness" of liquid-rich production such as Montney gas, investment in pipeline corridors and support for co-development platforms, complemented by coordination in market development, is not only an opportunity but an imperative. Our Canadian governments and agencies, in partnership with focused industry players, can establish market entry and market penetration in supporting a cost competitive and timely development and manufacturing environment.

Gastech Insights: Why should industry players attend the Canada Gas and LNG Exhibition and Conference in May?

Mary Hemmingsen: The conference will bring together the players who are poised to inform and lead a new thrust for market access and development for our vast Western Canadian gas resources,

and in doing so realize the opportunity of gas value-add export products to contribute to the trifecta of energy, economic and global environmental performance improvement.

The Canada Gas and LNG Exhibition and Conference on 14-16 May, will identify the opportunity, tackle the challenges and set the solutions for long-term gas monetisation in Canada. Hear Ms Hemmingsen speak along with many other industry experts, book your pass today.
Image courtesy of NW Innovation Works

The NW Innovation Works and how methanol instead of LNG facilitate and export Canadian stranded gas. The higher costs associated with exporting it and the effects it will have on the NW economy is detailed in the articles below.

BP and China sign methanol plants at Port of Kalama and Port Westward
BP and China create Northwest Innovation Works JV

The UK super major BP and China Academy of Sciences created a cascade of joint venture called Clean Energy Technology Company to run the Northwest Innovation Works joint venture, a newly formed company, to build and operate twin major greenfield methanol plants at Port of Kalama in Washington, and at Port Westward in Oregon, USA.

With a total capital expenditure of \$3.6 billion, BP and China Academy of Sciences intend to use the gas-to-methanol conversion to facilitate the export of natural gas to China.

Methanol proposal arrived in Tacoma after extensive Inslee courtship
By Derrick Nunnally APRIL 09, 2016

A chart in the presentation's slide show described the Northwest's natural gas as a "stranded cheap resource." Another slide said it could become more profitable if converted to methanol for export than if exported as liquid natural gas.

Testimony of Paul N. Cicio
President
Industrial Energy Consumers of America

Excessive LNG exports significantly accelerate consumption of U.S. low-cost natural gas - damaging long-term manufacturing competitiveness and jobs.

Excessive LNG exports are not in the public interest and will increase the domestic price of natural gas and natural gas-fired electricity, reduce global competitiveness, reduce GDP, and impact middle class jobs.

Exporting LNG is a failed public policy. Consuming the natural gas in manufacturing creates eight times more middle class jobs.

Excessive LNG exports significantly accelerate consumption of low-cost natural gas – damaging long-term manufacturing competitiveness and jobs.

Natural gas is not a renewable resource and LNG exports significantly accelerate the consumption of U.S. low-cost natural gas.

Pacific NW Consumers Will Pay More for Energy if LNG Exports Go Forward
Where does Spectra's Westcoast Energy pipeline go at the U.S. border?

July 25, 2014 British Columbia, Canada, FERC, Washington John S. Quarterman

The combined Oregon LNG/Williams Expansion projects will force Pacific Northwest gas customers to outbid high-priced Asian markets for North American natural gas. The project will increase prices for every NW resident. Paul Cicio, President of the Industrial Energy Consumers of America, stated, "In the end, it's going to be every homeowner, every farmer buying fertilizer, and every manufacturer trying to create jobs who is going to be hurt by this."

Monetizing methanol Exporting natural gas in the form of methanol offers several advantages over the LNG pathway, argues an energy security expert.

Why Canada needs more pipelines FEBRUARY 13, 2019

In recent months, Canadian natural gas has been trading as low as one-third the price of U.S. gas, and sometimes close to one-tenth the price it could fetch in new markets, such as China, Japan, Korea and India.

For producers to realize better prices for natural gas they must diversify away from dependence on the U.S. market to areas where there's greater demand.

Rescue stranded gas assets with new markets, urges expert

B.C. has world-class natural gas reserves, but so does the U.S., which has gone from customer to competitor

By Nelson Bennett | March 29, 2016

Cheap gas from the Marcellus shale formation in New York state has been flooding into Eastern Canada, which was once supplied largely by the western provinces.

"That used to be almost all Canadian gas," said Dan Allan, executive vice-president of the Canadian Society for Unconventional Resources. "It's now being displaced by cheaper [U.S.] gas."

From 2007 to 2014, exports of Canadian natural gas to the U.S. declined 29%, according to Geoff Morrison, B.C. manager of operations for the Canadian Association of Petroleum Producers.

The Canadian Energy Research Institute estimates the flow of gas from the U.S. into Canada will double by 2027.

Thanks to the shale gas revolution, the Marcellus shale formation alone now produces more natural gas than all of Canada, Morrison said.

"We've been observing the U.S. [supplying gas to] markets that we traditionally serve, both in the States but also places like southern Ontario and Quebec," Morrison said. "Our biggest customer is now our biggest competitor, both in terms of North America [and] in terms of LNG."

But the U.S. isn't the only country with rich unconventional gas assets. The Montney Formation in northeastern B.C. is considered one of the richest in North America, due to its liquids.

And earlier this month, the National Energy Board updated estimates for the Liard Basin, which straddles B.C., the Yukon and the Northwest Territories. According to that estimate, B.C.'s share of the Liard has four times as much gas as previously estimated.

But without an export market in the form of an LNG industry, it's unlikely to see much

development.

"We've got a big tank of gas up here and we've got limited customers," said Greg Bury, president of the Gas Processing Association Canada. "If we don't get to the coast, ultimately we are going to have stranded gas and we are going to stop building projects.

"It's happening every day as we speak. I have been intimately involved with so many project cancellations that it's ridiculous."

Porter suggested the North American public doesn't realize just how important the shale gas boom has been for the American economy.

"We estimate that more than half of all the jobs that have been created since the Great Recession ended were in energy, or related to energy in one way or another," he said.

Since energy is a huge part of any economy, cheap oil and gas – for both power and transportation – are a huge competitive advantage.

"This has allowed us in the U.S. to have a substantial energy cost advantage over pretty much every other country, except Canada," Porter said.

But both Canada and the U.S. are at a crossroads.

Because of the local environmental concerns that fracking poses, and concerns about the effect on climate change of burning natural gas, shale gas and LNG are getting a rough ride in the department of social licence and the office of public opinion.

But just as North American innovation led to the shale energy revolution, Porter said, it can also address the attendant environmental concerns.

"This opportunity is truly a game-changer," Porter said. "Right now it doesn't feel so good, because oil prices are down and gas prices are linked to oil. But over the long run, this downturn is stimulating another wave of innovation and efficiency and competitive advantage."

Far from thwarting renewable energy investments, natural gas could be a buttress, he said.

"We're going to need a lot of natural gas if we're going to make the transition to clean energy. Natural gas is a powerful tool we have to make this transition, because it's going to take decades to do it. In the process of using natural gas as a transitional fuel, it's going to also hold down the cost of the transition."

2018 Economic Report Series LEVERAGING OPPORTUNITIES: DIVERSIFYING CANADA'S OIL AND NATURAL GAS MARKETS

Canadian producers are currently faced with insufficient takeaway capacity for both oil and natural gas. This in turn limits Canada's ability to serve existing domestic and U.S. markets, and prevents Canada from accessing emerging overseas markets.

Even more urgently, lack of infrastructure has caused discounted prices for Canadian oil and natural gas exports to the U.S. These price discounts cost Canadians billions of dollars every year. Canadians deserve fair market value for our natural resources.

The key to obtaining better value for our resources in global markets is to build new and improve existing infrastructure, so Canadian energy products can compete for emerging global markets. Even more urgently, lack of infrastructure has caused discounted prices for Canadian oil and natural gas exports to the U.S.

Canadian natural gas growth is limited by pipeline infrastructure bottlenecks and a lack of LNG export infrastructure, resulting in severely discounted prices for western Canadian natural gas in both domestic and U.S. market

Prices for natural gas have been persistently low for a decade, because supply has outstripped demand

This is a highly competitive market. In 2016, Wood Mackenzie conducted a competitiveness study for LNG,⁹ which showed that a Canadian facility could deliver LNG to northern Asia markets at around US\$11 per million British thermal units (MMBtu). While not as competitive as U.S. Gulf Coast projects, Canadian projects were seen to be more competitive than Australian greenfield projects and Alaskan LNG. LEVERAGING OPPORTUN

Canadian pipeline projects currently in development – particularly TMEP – would provide producers with much-needed market access options and reduce reliance on the U.S. as Canada's single export market. In addition, the proposed Eagle Spirit Energy project would transport oil from Alberta and B.C. to a West Coast export facility.

Canada's Natural Gas Industry Really Needs LNG

For western Canada, too much supply, not enough demand, and worsening pipeline constraints have saddled the gas industry with "the lowest prices in the world," even in negative territory.

RECEIVED

By DOE/FE at 3:25 pm, Nov 20, 2018

Driftwood LNG LLC: Supplement to) FE Docket No. 16-144-LNG
Application for Long-Term,)
Multi-Contract Authorization to)
Export Liquefied Natural Gas to)
Non-Free Trade Agreement Nations)
for a 20-Year Period)

NOTICE OF INTERVENTION, PROTEST AND COMMENT

The application seeks to increase the volume of LNG for which Driftwood LNG LLC (Driftwood LNG) requests export authorization from the equivalent of 1,415.3 billion cubic feet per year (Bcf/y) of natural gas. The U.S. Department of Energy (DOE) has not yet issued a final order on the pending application.

Executive Summary

DOE and the applicant have not demonstrated that the application to export LNG to NFTA countries is consistent with the public interest under the Natural Gas Act (NGA) and should therefore be denied. Figure 1, taken from the DOE report, "Macroeconomic Impacts of LNG Exports from the United States," illustrates that LNG exports create winners and losers. Natural gas producers and exporters are the winners and everyone else in the economy are losers, clearly illustrating that LNG exports are not in the public interest. Figure 1 makes clear that LNG exports are in the interest of the natural gas producer and LNG exporter, a small and narrow portion of the U.S. economy, and not in the interest of the public (consumers and economy at large). DOE approval of LNG export volumes connects low U.S. natural gas prices (\$3.00 MMBtu) to high global LNG prices (Asia \$12.00 MMBtu), which increases prices for U.S. consumers long term. DOE LNG export studies have violated the Data Quality Act, legally disqualifying their use as a resource for decision making. DOE has failed to consider the economic impact of a long list of consumer and economy-wide risks that are created by LNG exports. DOE failed to consider existing and future limitations in natural gas pipeline and storage infrastructure capacity and 'maximum' deliverability capacity needed to supply the U.S. market at peak demand and export LNG. All DOE reports assume that pipeline and storage capacity will be available despite the fact that constraints already exist and the ability to build-out new capacity is threatened by multiple legal and public opposition headwinds.

A Key Point: Consideration of LNG export applications need to lag the build-out of needed pipeline and storage capacity deliverability at peak demand needed to supply the U.S. homeowner, industrial and power generator consumers. If by chance that there is excess infrastructure capacity available to supply LNG export terminals, only then should these applications be considered. Unfortunately, the DOE is doing the opposite which threatens the entire domestic market. Especially at peak summer and winter demand.

If the DOE mismanages the approval volumes of LNG exports, and manufacturers lose competitive advantages, it puts trillions of dollars of manufacturing assets at risk, which is a sector with over 12 million high paying jobs.

I. Industrial Energy Consumers of America (IECA)

IECA is a nonpartisan association of leading manufacturing companies with \$1.0 trillion in annual sales and with more than 1.7 million employees. It is an organization created to promote the interests of manufacturing companies through advocacy and collaboration for which the availability, use and cost of energy, power or feedstock play a significant role in their ability to compete in domestic and world markets. IECA membership represents a diverse set of industries including: chemicals, plastics, steel, iron ore, aluminum, paper, food processing, fertilizer, insulation, glass, industrial gases, pharmaceutical, building products, automotive, brewing, independent oil refining, and cement.

II. The Natural Gas Act (NGA) requires that shipments to NFTA countries must not be inconsistent with the public interest. A U.S. Government Accountability Office (GAO) report¹ makes clear that neither Congress nor the DOE has ever defined the “public interest.” DOE is using guidelines developed in 1984 for LNG imports to inform LNG export public interest decisions.

The GAO report entitled, “Federal Approval Process for Liquefied Natural Gas Exports,” dated September 2014 includes the following statement on page 11.

In passing the NGA, Congress did not define “public interest;” however, in 1984, the DOE developed policy guidelines establishing criteria that the agency uses to evaluate applications for natural gas imports. The guidelines stipulate that, among other things, the market, not the government, should determine the price and other contract terms of imported natural gas. In 1999, DOE began applying these guidelines to natural gas exports.

In 1984, LNG imports were needed and they reduced risks for domestic consumers and manufacturers. Imports of LNG were in the public interest. LNG exports increase risk and especially market-determined LNG export levels by increasing consumer prices and reliability risks. Therefore, criteria used for decision-making in 1984 on LNG imports are inconsistent with what Congress had intended under the NGA, and should not be used to inform decision-making on LNG exports.

There is an explicit intent of Congress, in their asserting the requirement that LNG exports to non-free trade agreement (NFTA) countries must not be inconsistent with the public interest. And importantly, one can only assume they were referring to cumulative LNG export volumes because incremental volumes are too small to measure impact to the domestic price of natural gas. This is a reasonable assumption. When Congress passed the NGA and included the above-mentioned public interest provision, there is no mention of ‘markets’ as a predicate for determining levels of exports.

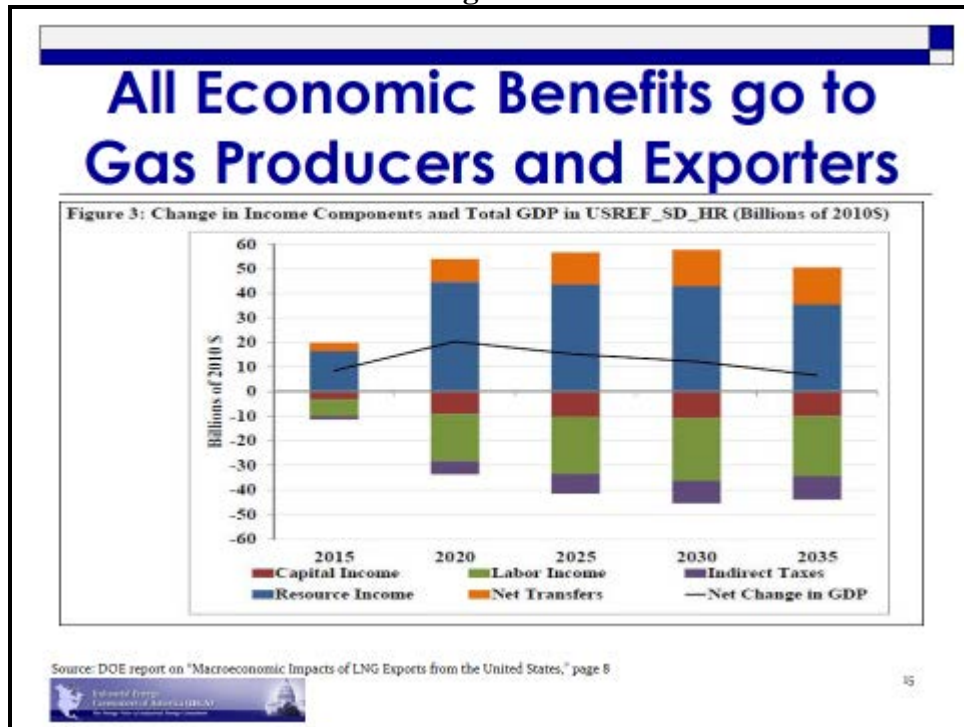
The U.S. Supreme Court has stated that “in order to give content and meaning to the words ‘public interest’ as used in the Federal Power and Natural Gas Acts, it is necessary

¹ “Federal Approval Process for Liquefied Natural Gas Exports,” U.S. Government Accountability Office (GAO), September 2014.

to look to the purposes for which the Acts were adopted. In the case of the Power and Gas Acts it is clear that the principal purpose of those Acts was to encourage the orderly development of plentiful supplies of electricity and natural gas at reasonable prices.”² Furthermore, the Court also stated that the “primary aim” of the NGA is “to protect consumers against exploitation at the hands of natural gas companies.”³ LNG exports exploit U.S. consumers when low domestic prices rise due to high global LNG demand.

To this point, the DOE report, “Microeconomic Impacts of LNG Exports from the United States” illustrates how natural gas companies exploit U.S. consumers by exporting LNG. You will note from Figure 1 below that the only entities that benefit from LNG exports are producers and exporters of natural gas. Everyone else is negatively impacted. The public loses. Natural gas costs increase, wages decrease, capital investment decreases, especially in manufacturing, and there is a reduction in indirect economic income.

Figure 1



U.S. consumers are benefiting by a U.S. natural gas market whereby domestic demand versus domestic supply is resulting in low relative natural gas prices. U.S. consumers are benefiting from our vast natural gas resources.

Why ‘markets’ cannot and should not be used to justify levels of specific LNG export applications volumes like this one or cumulative volumes of LNG exports is illustrated today with U.S. crude oil and gasoline prices. Because the U.S. crude oil price is connected to the global market, U.S. gasoline prices are at the highest levels in over four years. Global demand from other countries are dictating demand and price versus the

² NAACP v. Fed. Power Comm’n, 425 U.S. 662, 669-70 (1976).

³ FPC v. Hope Gas Co., 320 U. S. 591, 610 (1944).

U.S. supply and demand. The net result is that the U.S. consumer is NOT benefiting from our vast crude oil resources. This can and will happen to natural gas if our low natural gas prices are connected to the high price of global LNG markets. It is for this reason that connecting the low U.S. price of natural gas to the high global market price is NOT in the public interest.

What happened to Australia is another real time example that using markets to determine levels of LNG exports is not in the public interest. Australia has vast natural gas resources. Historically the consumer prices have been around \$3.00 MMBtu. Now, because of LNG exports, the Australian consumer pays the Asian LNG net back price. This means that the Australian consumer pays the high Asian LNG price less transportation and liquefaction costs, which has resulted in Australian domestic consumer prices at \$8, \$9 and \$10 MMBtu.

In fact, the Australian Competition and Consumer Commission started publication of LNG netback prices in order to boost price transparency.⁴ The story highlights that the Australian consumer net back prices have increased from 7.27 GJ in 2017 to 10.69 GJ YTD 2018, a 47 percent increase. In approving LNG export terminals, the Australian government let markets determine the volume of exports. A disastrous impact to their consumers and manufacturing sector as jobs continue to decrease.

The DOE study entitled, “Macroeconomic Outcomes of Market Determined Levels of U.S. LNG Exports”⁵ illustrates that LNG exports would substantially increase U.S. natural prices. Page 54 of the reports states that “for all the reference supply scenarios in the more likely range, natural gas prices could be from \$5.00 to \$6.50 per MMBtu in 2040. These mid-range scenarios have a combined probability of 47%.” This is the highest probability the study gave any scenario. Since today’s Henry Hub price is roughly \$3.00 MMBtu, the study confirms that natural gas prices could more than double causing domestic natural gas prices to rise to a level which would harm energy-dependent manufacturers and every homeowner. Consumers do not have an alternative. This is clearly not in the public interest.

There is all pain and no gain for consumers. The DOE report confirms that market determined U.S. LNG exports will connect U.S. prices to higher global LNG prices. The DOE report says that LNG exports will reduce the price that Asian countries pay and increase U.S. prices and eventually our prices will reach parity with Asia. At that point, the U.S. will have lost its competitive advantage. The report is explicit in highlighting the economic damage to especially manufacturing companies who are large users of natural

⁴ Australian Competition and Consumer Commission started publication of LNG netback prices in order to boost transparency. October, 2018. LNG World News https://www.lngworldnews.com/australian-watchdog-starts-lng-netback-price-publication/?utm_source=emark&utm_medium=email&utm_campaign=daily-update-lng-world-news-2018-10-05&uid=55872

⁵ “Macroeconomic Outcomes of Market Determined Levels of U.S. LNG Export,” U.S. Department of Energy (DOE), June 7, 2018, <https://www.energy.gov/sites/prod/files/2018/06/f52/Macroeconomic%20LNG%20Export%20Study%20018.pdf>.

gas. Importantly, manufacturers will have lost their competitive advantage, with very serious long-term implications for a viable manufacturing sector, jobs, and investment.

IECA urges the DOE to conduct a rulemaking to define the public interest for LNG exports to NAFTA countries before giving consideration to this and future application to export. The DOE should not give final approval to any LNG export application without having established the definition and evaluated the cumulative impact to the public interest. LNG volumes that connect low U.S. natural gas prices to high global LNG prices long term cannot possibly be in the public interest.

III. Violation of the Data Quality Act

DOE economic evaluations of LNG export public interest considerations must not violate the Data Quality Act (DQA). Other than the first EIA report, all DOE LNG export study reports have used proprietary economic modeling whose results cannot be duplicated by others, a violation of the DQA. (see appendix).

IV. DOE has not addressed vital short and long-term risks to consumers and the economy that are core issues in considering whether an LNG export application is consistent with the public interest.

a. DOE failed to consider pipeline and storage capacity risk constraints (and at peak demand), and their cost and reliability impact.

DOE failed to consider existing and future limitations in natural gas pipeline and storage infrastructure capacity and ‘maximum’ deliverability capacity needed to supply the U.S. market at peak demand ‘and’ export LNG. All DOE reports assume that pipeline and storage capacity will be adequate despite the fact that constraints already exist and the ability to build-out new capacity is threatened by multiple legal and public opposition headwinds.

The Henry Hub basis differential is an example. There are at least five pipelines with about 9 Bcf/day of capacity moving gas from Marcellus toward the Gulf, but only 2 Bcf/day has pipeline capacity to actually get the gas to LNG export terminals in Louisiana and Texas. This means that when a Gulf coast LNG export terminal starts up, the demand will drive up (blow-out) the HH basis price for consumers in the region. A direct cause and effect.

Today, gas marketers and industrial companies have difficulty securing capacity on pipelines because gas producers have locked in firm capacity and there is no excess capacity for manufacturing companies. We cannot grow our facilities without increased pipeline capacity.

The cost impacts of natural gas pipeline and storage peak demand limits are stunning as we saw from January 1 to January 8, 2018. Winter demand prompted severe gas and electricity price spikes in PJM at an estimated cost of \$10 billion. The 2014 Polar Vortex estimated cost was \$49 billion. Any one of these types of events greatly exceeds any “net

economic benefit” from exporting LNG. During the time frame of January 1 to January 8, 2018, 58.6 percent of total ISO gas fired electricity capacity was idle because of inadequate pipeline capacity. Nearly 45,000 MW of gas-fired capacity was idle in three NE ISOs.

b. DOE’s failure to consider infrastructure pipeline deliverability and storage limitations is inconsistent with the President Trump’s concern for reliability and resiliency of the electric grid.

Approving more applications to export is getting the cart before the horse. The DOE Electricity Office is doing the right thing examining vulnerability of the pipeline infrastructure. Studies are underway that will confirm what everyone already knows is that there are existing pipeline capacity problems.

c. DOE’s failure to consider that LNG export consumers are fundamentally countries who have the ability to buy LNG from the U.S. at any price, even during winter peak demand, to keep their countries operating, results in higher marginal prices for consumers.

LNG buyers are basically countries. Either state-owned enterprises (SOEs) and or government-controlled utilities with automatic cost pass through. It is troubling that the largest LNG consuming countries have winter when we do which means that their highest demand is when we have our highest demand.

d. Failure to address cumulative demand versus natural gas resources.

A comparison of the U.S. Energy Information Administration’s (EIA) AEO 2018 cumulative demand through 2050 to EIA’s estimates of technically recoverable natural gas resources in the lower 48 shows that this demand would consume 69 percent of all resources. And, EIA has LNG exports peaking at only 14.5 Bcf/day. A very conservative forecast. While over time resources have been increasing, forecasted demand is out-stripping new resources. IECA did the same analysis using EIA AEO 2017 demand. That analysis concluded that 57 percent of all resources would be consumed. We anticipate that AEO 2019 will show substantially higher and faster consumption of available resources.

e. Failure to consider the uncertain nature of technically recoverable resources. Caution is warranted by DOE to not over-commit.

It is also important to keep in mind that *technically available* resources do not mean that they are *economical* to produce. To this point, the natural gas industry’s Potential Gas Committee’s most recent report of July 2017 states that 58 percent of all natural gas resources are classified as either ‘possible’ (new fields) or ‘speculative’ (frontier fields), which adds more uncertainty that these resources may not produce low-cost natural gas. All DOE LNG export reports assume that all of this natural gas is economical to produce when no one really knows because no one has ever drilled a well in these ‘new fields’ or ‘frontier fields’.

f. Failure to consider future political decisions to limit acreage available for drilling or regulations on water or hydraulic fracturing that increase costs that must be recovered in higher prices of natural gas.

We have Presidential elections every four years that can change everything. As we have seen with some past Administrations, there were regulatory actions to limit access to federal lands for drilling and regulations to control drilling processes that increase the cost of production. A new Administration could inflict all of these and more thereby increasing natural gas costs and prices. States have and will continue to take action to limit drilling. Caution is warranted.

g. Failure to consider that the majority of producers of natural gas do not have a positive cash flow business.

Even with relatively higher crude oil prices for the first half of 2018, only 3 of 33 oil and gas companies posted positive cash flow. This is not sustainable long-term. Wall Street is concerned about the indebtedness of producers. Investors demand certain ROE's to continue to invest or lend money for drilling more wells. The fact that interest rates are also increasing puts further pressure on costs. Combined, this means that the price of natural gas must rise. DOE LNG studies do not address this fundamental issue.

h. Foreign consumers of U.S. LNG exports are receiving the benefits of using our infrastructure that is paid for by U.S. consumers, without paying for it. Their use of it increases our costs.

LNG exports use of U.S. infrastructure increasing the costs to all U.S. consumers. DOE has failed to consider these costs.

IECA wishes to intervene and be made a party to this proceeding, with all of the rights attendant to such status pursuant to 10 C.F.R. 590.303(b).

Sincerely,

Paul N. Cicio
President
Industrial Energy Consumers of America (IECA)
1776 K Street, NW Suite 720
Washington, DC 20006
202-223-1661
www.ieca-us.org

APPENDIX**IECA letter on Data Quality Act to the DOE**

July 27, 2018

Mr. Max Everett
Chief Information Officer (CIO)
U.S. Department of Energy
1000 Independence Avenue, SW
Washington, DC, 20585

Re: Data Quality Act Request for Correction: U.S. Department of Energy (DOE) Study on Macroeconomic Outcomes of Market Determined Levels of U.S. LNG Exports, Docket No. 2018-12621

Dear Mr. Everett:

The Industrial Energy Consumers of America (IECA) requests a correction of the U.S. Department of Energy's (DOE) study on "Macroeconomic Outcomes of Market Determined Levels of U.S. LNG Exports," docket no. 2018-12621. The study uses a proprietary and non-reproducible economic model which violates the Data Quality Act (DQA). IECA seeks other important DQA corrections as well.

The DQA passed through Congress in Section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001 (Public Law 106-554, HR 5658)⁶ and mandates that agencies ensure "maximizing the quality, objectivity, utility, and integrity of information (included statistical information) disseminated by Federal agencies" to the public.

The DOE's "Final Report to the Office of Management and Budget on Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity of Information Disseminated by the Department of Energy"⁷ sets specific guidelines that must be met for the quality of information to be distributed to the public. Under the DOE guidelines, the study qualifies as "influential," meaning that it may result in an annual effect on the economy of \$100 million or more.

The DQA guidelines, some of which are provided below, provide specific and important definitions. The study fails to meet these DQA standards.

- "Reproducibility: means the capability of being substantially reproduced, subject to an accepted degree of imprecision, and with respect to analytical

⁶ Treasury and General Government Appropriations Act for Fiscal Year 2001(Public Law 106-554)

<https://www.fws.gov/informationquality/section515.html>

⁷ https://www.energy.gov/sites/prod/files/nepapub/nepa_documents/RedDont/G-DOE-67FR62446OMBquality.pdf

results, “capable of being substantially reproduced” means that independent analysis of the original or supporting data using identical methods would generate similar analytical results, subject to an acceptable degree of imprecision or error.”

DOE’s own guidelines say, “At minimum, DOE Elements should assure reproducibility for those kinds of original and supporting data according to “commonly accepted scientific, financial, or statistical standards.”

- “Objectivity: means the information is presented in an accurate, clear, complete, and unbiased manner and the substance of the information is accurate, reliable, and unbiased. The guidelines require formal, independent, external peer review.”
- “Integrity: means the information has been secured and protected from unauthorized access or revision, to ensure that the information is not compromised through corruption or falsification.”

1. The DOE study uses a NERA proprietary economic model.

Third party economists have concluded that the results of the study are not reproducible, a requirement of the DQA. For this reason, a correction is necessary. A correction meaning that the study cannot be used for its intended purpose. Or, it must be redone with a non-proprietary economic model.

2. IECA seeks proof of paperwork and DOE decisions that the owner of the model, the peer review panel participants and study contributors fully complied with the DQA.

IECA believes that possibly every one of the individuals/entities involved have or will receive financial benefits from the natural gas and LNG export related industries, with the exception of John Staub of the EIA, and would not be independent in their views. A correction is necessary to comply with DOE DQA guidelines of objectivity and integrity.

IECA requests the documents that were required to be filed by study participants. The DQA guidelines state that “peer reviewers be expected to disclose to agencies prior technical/policy positions they may have taken on the issues at hand, (c) per reviewers be expected to disclose to agencies their sources of personal and institutional funding (private and public sector), and (d) peer reviews be conducted in an open and rigorous manner.”

If you have any questions, please contact me directly at 202-223-1661 or via email at pcicio@ieca-us.org.

Sincerely,

Paul N. Cicio
President

The guidelines, some of which are provided below, provide specific and important definitions. The study fails to meet DQA standards.

- “Reproducibility: means the capability of being substantially reproduced, subject to an accepted degree of imprecision, and with respect to analytical results, “capable of being substantially reproduced” means that independent analysis of the original or supporting data using identical methods would generate similar analytical results, subject to an acceptable degree of imprecision or error.”

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