

**HEARING ON THE IMPORTANT ROLE OF U.S. LNG IN  
EVOLVING GLOBAL MARKETS**

**SENATE COMMITTEE ON ENERGY AND NATURAL  
RESOURCES**

**JULY 11, 2019**

**COMMENTS FOR THE RECORD**

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## EXECUTIVE SUMMARY

1. The U.S. Department of Energy (DOE), nor the Federal Energy Regulatory Commission (FERC) has conducted an analysis to determine whether there is sufficient natural gas pipeline capacity to serve the LNG export market at volumes equal to existing approved applications of 55.9 Bcf/d to free trade agreement (FTA) countries and 28.5 Bcf/d to non-free trade agreement (NFTA) countries or the DOE's plan to approve up to 52.8 Bcf/d to NFTA countries and the growing domestic market.
2. The DOE plans to approve LNG export volumes to NFTA countries equal to 71 percent of U.S. demand is NOT in the public interest under the Natural Gas Act.
3. The case for U.S. LNG exports to counter Russia.
4. Implications of excessive LNG export volumes to U.S. manufacturers and other consumers.
5. The U.S. has only 57 years of technically recoverable natural gas and has decreased annually due to accelerated domestic and export demand.
6. FERC says that demand outpaced supply in 2018 and this resulted in storage levels that at times were the lowest in more than a decade.
7. IECA LNG export policy position.

## COMMENTS FOR THE RECORD

- 1. The U.S. Department of Energy (DOE), nor the Federal Energy Regulatory Commission (FERC) has conducted an analysis to determine whether there is sufficient natural gas pipeline capacity to serve the LNG export market at volumes equal to existing approved applications of 55.9 Bcf/d to free trade agreement (FTA) countries and 28.5 Bcf/d to non-free trade agreement (NFTA) countries or the DOE's plan to approve up to 52.8 Bcf/d to NFTA countries and the growing domestic market.**

We urge the Senate Committee on Energy and Natural Resources to hold an oversight hearing on this matter. Among other things, inadequate natural gas pipeline capacity jeopardizes national reliability of the electrical grid. Manufacturers already do not have sufficient pipeline capacity in various locations across the U.S. Inadequate pipeline capacity is a deterrent to economic growth and jobs, and prevents manufacturing companies from expanding production. The problem becomes especially acute during high summer or winter demand.

None of the DOE LNG export studies used to justify approval of applications under the NGA public interest provision considered whether there is sufficient cumulative pipeline capacity to simultaneously serve the LNG export market and U.S. consumers. The Committee knows very well that it is getting much harder to build pipelines.

The INGAA Foundation released a report in May 2019 that provides important insight which explicitly details the need for significant new pipeline capacity due to LNG exports and how LNG exports increase price volatility for natural gas and electricity for U.S. consumers.<sup>1</sup>

### **The following information represents INGAA's Balanced Future Scenario.**

INGAA: Under the Balanced Future Scenario, natural gas exports from LNG terminals and pipeline exports to Mexico will grow by approximately 15.7 Bcf/d between 2020 and 2040 to a total of nearly 24.5 Bcf/d.

- IECA response: The EIA states that total exports to Mexico and LNG exports are 7.6 Bcf/d in 2018. It is questionable that there is existing pipeline capacity to handle even the minimum growth demand of 15.7 bcf/day by 2020, let alone 24.5 Bcf/d by 2040.

INGAA: Up to 13 Bcf/d of take-away capacity from the Marcellus/Utica and 8 Bcf/d from the Permian Basin will be needed to transport this production to markets in the Gulf Coast, Florida, the Southeast, and New England.

- IECA response: It is questionable that the stated volume of needed carry-out capacity can be accommodated to match the significant build out of LNG export terminals due to

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<sup>1</sup> "The Role of Natural Gas in the Transition to a Lower-Carbon Economy," The INGAA Foundation, May 2019.

the rise of opposition to building new pipelines. Several pipelines approved by FERC years ago have not been built because of opposition.

INGAA: LNG export terminal operators/tollers. These entities seek firm access to large low-cost gas production basins to supply gas to an LNG terminal.

- IECA response: Firm access pipeline arrangements lock in pipeline capacity for exporters and reduces available pipeline capacity for domestic consumers.

INGAA: Under the Balanced Future Scenario, eight LNG export terminals will be in operation in the Gulf Coast by 2040, with close to 9.2 Bcf/d of demand for incremental feed gas by 2020 and another 4.1 Bcf/d by 2040. The Atlantic Coast LNG terminals at Cove Point and Elba Island, will add 1.0 Bcf/d of feed gas demand by 2021 and remain flat through 2040. *This incremental gas demand will significantly affect the daily and seasonal utilization of pipelines along the eastern seaboard and the service offerings needed to meet the requirements of these LNG terminals.*

- IECA response: There is inadequate pipeline capacity along the eastern seaboard right now and becomes more severe during peak seasonal winter demand. As IECA has stated to the Committee many times, the large LNG buying countries have winter when we do. This means that exporters will be consuming pipeline capacity and pulling on our limited natural gas storage inventories when U.S. consumers need it most. The DOE LNG export studies did not consider impacts to price due to LNG seasonal demand or pipeline capacity constraints that drive up basis costs for consumers. Because natural gas and electricity are priced on the margin, price impacts will be larger.

INGAA: Higher ambient temperatures will require more feed gas to produce the same amount of LNG. The variation of daily feed gas could approach 12 percent during the peak summer months, which will translate into over 2 Bcf/d of extra feed gas demand on certain days.

- IECA response: First, this means that LNG demand will be higher than what DOE is saying, due to higher temperatures in the Gulf Coast. This also means that LNG exports will cause greater price and demand volatility during the summer months.

INGAA: Additional gas storage or pipeline no-notice services will be needed to help mitigate the types of intra-day swings that already have been observed at existing LNG liquefaction terminals.

- IECA response: Intra-day swings are already being observed even at the existing lower LNG export volumes.

INGAA: The destination markets for the LNG terminals currently under construction are in Asia and Europe. Because of significant seasonal demand variability in both markets, the volume of U.S. LNG exports could vary significantly. High U.S. demand for natural gas during the peak winter months to serve residential and commercial load *could place additional stress on the*

*existing natural gas infrastructure*, requiring new infrastructure to serve LNG exports for the global market. LNG export terminals have supported numerous dedicated pipeline projects to ensure that capacity will be available year-round.

- IECA response: This is additional confirmation of predicted significant seasonal demand variability, which also means price volatility for both natural gas and electricity. Many export terminals have dedicated lateral pipelines to serve the export facility. Export terminals still rely on the same interstate pipelines that all other consumers rely upon.

INGAA: For a Gulf Coast LNG liquefaction train, the feed gas rate can fluctuate throughout the day and seasonally. LNG liquefaction operators or tollers will need daily balancing services on pipelines and/or use instantaneous, no-notice storage services to mitigate diurnal feed gas rate swings in both directions.

Pipeline imbalance tolerances will allow a shipper to flow typically within +/-2.5 percent of daily variation; however, the daily swings for LNG liquefaction feed gas rates are expected to far exceed those thresholds during summer months. *Even if pipelines allowed a 5 percent nomination tolerance, the average daily variation would exceed that limit seven months of the year.*

- IECA response: Illustrates the disruption and volatility for seven months out of the year.

## **2. The DOE's plans to approve LNG export volumes to NFTA countries equal to 71 percent of U.S. demand is NOT in the public interest under the Natural Gas Act.**

The DOE plans to approve all applications to export LNG to NFTA countries, a volume equal to 52.8 Bcf/d or 71 percent of U.S. demand. In the long-term, doing so threatens the manufacturing renaissance that has created millions of high paying jobs and started the reshoring of manufacturing facilities. The DOE plan to let global the market determine how much is exported - is no plan at all.<sup>2</sup>

In February 2019, IECA sent a letter to the Senate Energy and Natural Resources Committee requesting an oversight hearing on this matter. To date, no oversight has occurred.<sup>3</sup>

It is critically important that LNG export volumes are not so large that the U.S. price becomes connected to the global LNG market. This threat is not merely hypothetical, it happened in Australia, despite the fact that Australia has vast resources and growing production. The Australian example shows that using *market determined* levels of LNG exports is not in the

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<sup>2</sup> "Study on Macroeconomic Outcomes of LNG Exports: Response to Comments Received on Study," U.S. Department of Energy, December 28, 2018, <https://www.federalregister.gov/documents/2018/12/28/2018-28238/study-on-macroeconomic-outcomes-of-lng-exports-response-to-comments-received-on-study>

<sup>3</sup> IECA letter to Senate Committee on Energy and Natural Resources, February 5, 2019, [https://www.ieca-us.com/wp-content/uploads/02.05.19\\_Letter-to-Hill-for-LNG-Oversight\\_Senate.pdf](https://www.ieca-us.com/wp-content/uploads/02.05.19_Letter-to-Hill-for-LNG-Oversight_Senate.pdf)

public interest. They are over ten years ahead of the U.S. in exporting LNG. 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.

The Australian Competition and Consumer Commission started publishing LNG netback prices in order to boost price transparency.<sup>4</sup> 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, which has now directly caused disastrous impacts to consumers and the manufacturing sector as jobs continue to decrease.

### **3. The case for U.S. LNG exports to counter Russia.**

The political case has been made that the U.S. should use LNG as a way to counter Russian aggression in the EU. IECA supports such national security objectives. However, the DOE has already approved LNG export volumes capable of supplying the entire LNG import capacity of the EU. That being said, additional LNG export approvals cannot be justified on the basis of national security. Also, since the U.S. started exporting in 2016, China has been one of the largest buyers of U.S. LNG. Shipping U.S. LNG to China is inconsistent with national security arguments.

Congressional efforts to steer U.S. taxpayer monies to support studies and building of LNG import facilities in other countries should be opposed - because these same import facilities would be utilized by other LNG producing countries like Qatar and Russia. Tax payer money is already being used for this purpose under the United States Trade and Development Agency (USTDA). We urge Congress to stop funding such projects.

### **4. Implications of excessive LNG export volumes to U.S. manufacturers and other consumers.**

The DOE LNG export studies have confirmed that LNG exports lower the price of natural gas to countries receiving the LNG, while increasing U.S. prices for both natural gas and electricity long term. This directly impacts competitiveness of the manufacturing sector negatively. If the DOE approves high volumes of LNG exports, U.S. manufacturers will lose their competitive advantage and this puts trillions of dollars of manufacturing assets at risk, a sector with over 12.5 million high paying jobs.

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<sup>4</sup> "Australian watchdog starts LNG netback price publication," October 2018, LNG World News [https://www.lngworldnews.com/australian-watchdog-starts-lng-netback-price-publication/?utm\\_source=email&utm\\_medium=email&utm\\_campaign=daily-update-lng-world-news-2018-10-05&uid=55872](https://www.lngworldnews.com/australian-watchdog-starts-lng-netback-price-publication/?utm_source=email&utm_medium=email&utm_campaign=daily-update-lng-world-news-2018-10-05&uid=55872)

According to the U.S. Bureau of Labor Statistics (BLS), the oil and gas industry had only 415.1 thousand jobs in 2018 or 3.3 percent of that of the manufacturing sector. This means that even if oil and gas jobs doubled due to LNG exports, the gain in jobs would pale in comparison to what would be lost in the manufacturing sector.

Given the high concentration of petrochemical jobs in the Gulf coast region that rely on competitive natural gas and electricity costs, this area would be hardest hit by the lost manufacturing jobs. It is in the public interest to limit the volume of LNG exports.

The CFTC report of May 2018 issued warnings. In the Executive Summary it says, "Aside from limited pipeline gas traded with Canada and Mexico, U.S. natural gas has been relatively insulated from international market dynamics. Increasing exports of LNG from the U.S. may mean that the domestic market will be influenced more by global forces." And, under its three conclusions it says, "U.S. LNG export growth may put upward pressure on domestic (US) natural gas prices and expose a heretofore relatively isolated North American market to global market dynamics."<sup>5</sup>

#### **5. The U.S. has 57 years of technically recoverable natural gas and has decreased annually due to accelerated domestic and export demand.**

The U.S. has only 57 years of technically recoverable natural gas resources in the lower 48. The EIA's Annual Energy Outlook (AEO) for 2019 states that the U.S. total demand that includes net exports from 2018 to 2050 is 1,277 Tcf. The EIA says there is 2,215 Tcf of technically recoverable resources. The EIA report also says that 85 percent of U.S. natural gas resources in the lower 48 are unproven. Page 2 of the EIA's oil and gas assumptions states that the "Estimates of TRR (technically recoverable resources) are highly uncertain, particularly in emerging plays where relatively few wells have been drilled."

#### **6. The FERC says that demand outpaced supply in 2018 and that resulted in storage levels that at times were the lowest in more than a decade.**

The FERC's State of the Markets Report from April 2019 raises consumer concerns, especially considering that LNG exports are low relative to what volumes will occur in the next 2-3 years.

"In 2018, natural gas demand reached a record high, driven primarily by increased demand for natural gas-fired generation and liquefied natural gas (LNG) export growth. Record high demand was accompanied by record high production, with the largest growth from the Marcellus Shale and the Permian Basin. However, demand growth outpaced production growth, resulting in consistently lower-than-average storage levels that at times were the lowest in more than a decade. Low storage contributed to rising natural gas prices across the

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<sup>5</sup> "Liquefied Natural Gas Developments and Market Impacts," CFTC, May 2018, [https://www.cftc.gov/sites/default/files/2018-05/CFTC\\_LNG0518\\_3.pdf](https://www.cftc.gov/sites/default/files/2018-05/CFTC_LNG0518_3.pdf)

nation, although pipeline additions helped to broadly distribute growing production and ease tightness in some markets. In the electric markets, day-ahead on-peak prices increased across the country, reflecting the general increase in natural gas prices.”

## **7. IECA LNG export policy position.**

The information above demonstrates the need for joint Congressional, DOE, and FERC action to develop answers to the question of whether there is sufficient pipeline capacity to serve domestic consumers plus exports – and with the very large pending increase in demand. This is a serious issue for national security, electric grid reliability, and the cost and reliability for home owners, farmers, and manufacturers nationwide. Without adequate pipeline capacity, economic growth is negatively impacted.

IECA supports LNG exports to countries with which the U.S. has an FTA. FTAs are countries with which U.S. manufacturers have a level playing field on trade. However, the majority of LNG demand is from NFTA countries. Exporting large amounts of LNG to NFTA countries undermines U.S. manufacturing competitiveness and our leverage to negotiate FTAs. In fact, U.S. manufacturers have already lost relative competitive advantage due to LNG exports.

IECA supports the NGA which requires applications to export LNG to NFTA countries must not be inconsistent with the public interest. The Congressional intent of the NGA is to place the U.S. consumer first and LNG exports second - but that is not how the DOE has interpreted this provision. In fact, the DOE LNG export studies have shown that it is only the natural gas producers and exporters who economically benefit from LNG exports. Everyone else in the economy loses. LNG exports shift significant risks without benefits to consumers.<sup>6</sup>

A fundamental reason why it is important for policymakers to fully intervene is because the global LNG market is not a free market. It does not play by free market rules because all of the LNG buyers are backed by governments. Buyers are state owned enterprises and government regulated utilities, all of which have automatic cost pass-through. This is important because when global LNG markets have more demand than supply, these players will pay any price for natural gas, no matter how high, to keep their countries supplied. They have the ability to literally *buy-away* natural gas from the domestic consumer.

IECA supports a time out on approvals of further LNG export applications to NFTA countries. Let those under construction come online and conduct a study to determine whether there is sufficient natural gas at affordable prices for the next 30 plus years to supply the domestic market and the pipeline capacity to serve the U.S. market and additional LNG exports. If the study indicates that there is not sufficient supply at affordable prices, DOE should not approve additional LNG applications to export.

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<sup>6</sup> “2012 LNG Export Study,” U.S. Department of Energy, <https://www.energy.gov/fe/services/natural-gas-regulation/lng-export-study>



The exception is LNG exports from Alaska. Alaskan natural gas is stranded and does not have access to the lower 48 states. This project should be a priority.

The DOE LNG export studies that are used to justify NGA public interest decisions, should not use proprietary economic models because they are non-transparent and cannot be challenged for accuracy. The DOE admits to using proprietary economic models.

Under no circumstances should U.S. LNG be shipped to countries that subsidize their manufacturing or power sectors.