



Industrial Energy Consumers of America

The Voice of the Industrial Energy Consumers

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June 28, 2017

The Honorable Rick Perry
Secretary
U.S. Department of Energy
1000 Independence Avenue, SW
Washington, DC 20585

The Honorable Wilbur Ross
Secretary
U.S. Department of Commerce
1401 Constitution Avenue, NW
Washington, DC 20230

Dear Secretaries Perry and Ross:

Excessive LNG export approvals by the U.S. Department of Energy (DOE) to countries with which the U.S. does not have a free trade agreement is inconsistent with President Trump's "America First" and "fair-trade" policies, and poses a significant long-term threat to energy-intensive trade-exposed (EITE) industries' competitiveness and jobs. DOE approved volumes of 20.6 billion cubic feet a day (Bcf/d) to non-free trade agreement (NFTA) countries, which is equal to 170 percent of today's total residential demand. The Energy Information Administration's (EIA) Annual Energy Outlook (AEO) 2017 natural gas demand forecast to 2050, which is only 33 years away and accounts for only 12 Bcf/d of LNG exports, demonstrates that 56 percent of all natural gas resources will be consumed in that time frame. The 100-year supply is a myth. For companies who build facilities to last 50 years or more, this is of great concern.

The DOE's mandate under the Natural Gas Act (NGA) is to determine whether an LNG export application for shipment to NFTA countries are in the public interest. The fact is that utilizing natural gas in manufacturing, as compared to exporting it, creates eight times more jobs, twice the direct value added per year and 4.5 times the direct construction jobs. Yet, none of the three DOE public interest studies made this comparison. One of the studies describes the significant negative impact of LNG exports when it stated, "it raises energy costs and, in the process, depresses both real wages and the return on capital in all other industries," while another study states that exporting LNG increases domestic prices and reduces natural gas prices for foreign buyers of LNG. The combined net effect is that U.S. manufacturers lose relative global competitiveness.

We urge you to act quickly to implement five public interest policy recommendations, which includes establishing prudent common-sense safeguards to protect consumers, the economy, and which encourages manufacturing companies to continue to invest and create jobs.

The American Petroleum Institute (API) and some members of Congress from natural gas producing states have said in the past that safeguards are not needed. We hope that they are correct. However, trillions of dollars of manufacturing assets would be at risk, if the assumptions are wrong. This is not an acceptable gamble. It is better to have safeguards in place.

JUSTIFICATION FOR PRUDENT COMMON-SENSE SAFEGUARDS

1. According to the DOE and EIA, total LNG export approvals to both FTA and NFTA countries now equals 71.2 percent of U.S. 2016 natural gas demand. Approved volumes to NFTA countries alone equals 170 percent of total residential demand. Of concern, is that the Administration has said publicly that it will approve all applications.
2. EIA is forecasting NYMEX natural gas prices to rise 87 percent by 2020. The price rise is in large part due to several LNG export terminals becoming operational.
3. If domestic prices rise to global levels, the U.S. will have lost its competitive advantage. The incentive to invest in the U.S. would be gone and onshoring would stop.
4. Shipping LNG to NFTA countries rewards them for not having a free trade agreement with the U.S. and undermines our ability to secure bilateral fair-trade agreements for manufactured goods. Fifty-six percent of 2016 LNG exports shipped to 13 NFTA countries (see figure 7). And, the U.S. should never agree to ship LNG to countries that subsidize their manufacturers and power plants.
5. U.S. natural gas infrastructure, such as pipelines and storage, enable LNG exports, but do so at the expense of the domestic natural gas consumer. Not only will the commodity price be impacted by higher demand, but pipeline and storage capacity will be dominated by offshore needs. This is not "America First".
6. What has already been approved for NFTA countries is greater than the EU's total capacity to import LNG. The issue of supplying our allies is no longer an excuse for more NFTA approvals.
7. Exporting LNG is not a large job creator, when making a comparison to manufacturing. For example, from 2010 to 2016, the entire oil and gas industry created only 21,000 jobs. During that same time, the manufacturing sector created 820,000 jobs. Manufacturing can create eight times more jobs using natural gas than exporting it.

PUBLIC INTEREST POLICY RECOMMENDATIONS

1. Establish a national LNG export policy for shipments to NFTA countries, which is consistent with the Trump Administration's "fair trade" and "America First" policies.
2. Establish a moratorium on further LNG export approvals to NFTA countries.
 - a. Let existing LNG export terminals that are approved for shipment to NFTA become operational and determine if the natural gas industry has the capability to increase production, pipeline transportation, and storage capacity without price increases and/or supply shortages that damage the U.S. economy.
 - b. Conduct a rulemaking to define public interest with a priority on maximizing domestic job creation, not just GDP. Conduct a new economic study guided by the definition of public interest.

3. DOE should implement its authority under the Natural Gas Act (NGA), to establish a process of ongoing monitoring of economic impacts of LNG export volumes, and with the ability to reduce LNG export volumes for purposes of establishing a safety valve for U.S. consumers and the economic welfare of the country.
4. DOE should condition all NFTA and FTA existing and new LNG applications. If they do not commence operation in five years, the facility should require re-permitting.
5. The Trump Administration should not allow foreign governments to own, in whole or in part, LNG export facilities or U.S. natural gas resources.

Any LNG export policy that results in U.S. prices rising to global levels is completely inconsistent and not compatible with a job creating manufacturing sector.

IECA is often asked why other large manufacturing trade associations like the National Association of Manufacturers, the U.S. Chamber, the American Chemistry Council, and the Business Roundtable do not raise concerns about excessive LNG exports. The answer is that 100 percent of IECA member companies are manufacturing companies. Other trade associations have company membership which includes the oil and natural gas industry, and prevents them from addressing these concerns.

The following information provides a thorough analysis and justification for taking action. We look forward to working with you.

Sincerely,

Paul N. Cicio
President

cc: The Honorable Robert Lighthizer, U.S. Trade Representative
Senate Committee on Energy and Natural Resources
Senate Committee on Finance
Senate Committee on Foreign Relations
House Committee on Energy and Commerce
House Committee on Ways and Means
House Committee on Foreign Affairs

EXCESSIVE LNG EXPORT APPROVALS TO NFTA COUNTRIES BY THE DOE IS INCONSISTENT WITH PRESIDENT TRUMP'S PRIORITY TO INCREASE MANUFACTURING JOBS AND HIS "AMERICA FIRST" POLICY AND POSES A SIGNIFICANT LONG-TERM THREAT TO EITE INDUSTRIES' COMPETITIVENESS AND JOBS

The DOE has given final approval for shipment of LNG to NFTA countries equal to 20.6 Bcf/day (see figure 1). This volume is equal to 170 percent of the total residential natural gas consumption, 95 percent of the total industrial natural gas consumption, 73 percent of the total natural gas use in power generation, and 233 percent of total natural gas use in the commercial sector.

The DOE has also given final approval to shipments of LNG to FTA countries equal to 33.4 Bcf/d which is equal to 278 percent of the total residential natural gas consumption, 158 percent of the total industrial natural gas consumption, 122 percent of the total natural gas use in power generation, and 390 percent of total natural gas use in the commercial sector.

The combined LNG export approvals equals 54 Bcf/d, which is equal to 71.2 percent of 2016 U.S demand. And, the Trump Administration has announced that it intends to approve more export applications to NFTA countries. There are many more applications that have applied and have not been given final approval.

This is a breathtaking amount of natural gas exports that have exceedingly large negative potential implications for the economy and manufacturing sector jobs, given the relatively small economic gains for such significant risk. It is for these reasons, IECA has developed policy recommendations to reduce the risks.

FIVE PUBLIC INTEREST POLICY RECOMMENDATIONS

1. Establish a national LNG export policy for shipments to NFTA countries, which is consistent with the Trump Administration's "fair trade" and "America First" policy.

Establish a national LNG export policy that is consistent with the objective of negotiating bilateral trade agreements which result in "fair trade" agreements for manufactured goods, that recognizes that natural gas is a sovereign resource of the U.S. and its people, that natural gas should be used to maximize domestic job creation and ensure the U.S. manufacturing industries have a competitive advantage, that recognizes that natural gas is not renewable, and that the U.S. should never ship LNG to countries that subsidize their manufacturing sectors.

Approval of LNG exports to NFTA countries rewards them for not having a free trade agreement and undermines U.S. leverage to negotiate fair trade agreements for exports of manufactured goods. Shipping LNG to NFTA countries is inconsistent with fair trade and establishing a level playing field. In 2016, 56 percent of all U.S. LNG shipped went to 13 NFTA countries (see figure 7).

The policy places a priority of maximizing job creation. A study by Charles River Associates¹ compared the economic benefit of using natural gas in manufacturing versus exporting it. The study concludes that using natural gas in manufacturing creates eight times more jobs, more than twice the direct value added per year and 4.5 times then direct construction employment (see figure 2).

Exporting LNG is not much of a job creator. LNG export terminals only require a couple hundred employees to operate (see figure 3). And, according to the U.S. Bureau of Labor Statistics (BLS), total oil and gas industry employment in 2016 was only 180 thousand versus 12.3 million for the manufacturing sector. According to the BLS, U.S. manufacturing employment grew by 820 thousand from 2010 to 2016, while the oil and gas industry created only 21 thousand jobs (see figure 4). Theoretically, if LNG exports doubled the oil and gas industry jobs, it would still be small relative to the manufacturing sector. Importantly, as LNG exports increase and they result in higher prices, they threaten the competitiveness of the entire manufacturing sector jobs and trillions of dollars in existing assets.

The U.S. should not approve LNG export volumes that result in U.S. prices increasing to global price levels. Once they do, it will be foreign governments that dictate what U.S. consumers will pay. Today, U.S. prices are determined by supply versus demand market dynamics and work efficiently. The U.S. natural gas market is a real market.

The global LNG market is not a real market. On the supply side, there are few suppliers, several are countries and the potential exists for LNG suppliers to have market power and there have been discussions in past years about an OPEC-type LNG cartel. On the demand side of the equation, buyers are mostly state-owned enterprises or state-controlled electric or gas utilities with government backing and automatic cost pass-throughs. These entities can also exert buying market power. U.S. consumers cannot compete with foreign government-backed purchases of LNG which could occur in future peak winter or summer cooling periods.

To further illustrate how LNG is not a real market, and why the federal government needs to treat LNG differently to protect domestic consumers, we point to the announcement on March 23, 2017 where the three top buyers of LNG, representing 55 percent of LNG purchases globally created a memorandum of understanding (MOU) to exchange information and cooperate in the joint procurement of LNG.² They include China's National Offshore Oil Corporation, South Korea's KOGAS, and Japan's Jera. This agreement would be illegal in the U.S.

For these reasons, the U.S. should not allow foreign governments to own, in whole or part, LNG export facilities or natural gas resources in the U.S. To do so, undermines a well-functioning domestic market that is serving the public versus serving state-owned enterprises and foreign governments. Their investments serve their needs and not that of the American consumer, the antipathy of free markets.

¹ Charles River Associates: "US Manufacturing and LNG Exports: Economic Contributions to the US Economy and Impacts on US Natural Gas Prices", February 25, 2013, http://www.crai.com/sites/default/files/publications/CRA_LNG_Study.pdf.

² World's top LNG buyers form alliance to push for flexible contracts: <http://uk.reuters.com/article/asia-lng-markets-idUKL3N1H02FJ>

Low-cost natural gas is the driver behind the 264-chemical industry-related projects that represent over \$161 billion in new investment announced since 2010. According to the American Chemistry Council (ACC), the projects are estimated to create 426,000 high paying jobs and \$301 billion in economic output.³ Other gas-intensive industries have also made significant investments. This can continue long-term, but not without low-cost globally competitive natural gas. If U.S. prices rise to global levels like that of crude oil, the U.S. and its manufacturing sector will have lost its competitive advantage and the incentive to invest new capital in the U.S.

Many of these NAFTA countries impose tariffs on imported U.S. manufacturing goods and/or subsidize their manufacturers for unfair advantages. **The U.S. should never approve LNG exports to NAFTA and FTA countries which subsidize energy prices to their manufacturing and power generation industries. All NAFTA and FTA approvals should include specific provisions to ensure compliance.**

The DOE study titled “Macroeconomic Impact of Increased U.S. LNG Exports,” states that shipments of U.S. LNG reduce the costs of natural gas to foreign countries, especially Asia, while increasing domestic prices. Countries should not be rewarded with U.S. LNG before providing fair trade for U.S. manufacturing products.

U.S. industry and other consumers do not have an alternative to natural gas, and it is not renewable. As such, natural gas must be considered as a preferential resource, which requires special consideration. According to the EIA AEO 2017, net demand to 2050 will consume 1,227 Tcf, which includes a forecasted LNG peak demand of only 4.4 Tcf, only 22 percent of what has already been approved for export by the DOE (see figure 5). Given the EIA demand forecast and resource data, the U.S. will have consumed 56 percent of all natural gas resources in 33 years.

The EIA AEO 2017 is predicting Henry Hub prices will increase 87.0 percent by 2020.⁴ This is a substantial increase, particularly given that only a relatively small amount of LNG will be exported in that time frame.

2. Establish a moratorium on further LNG export approvals to NAFTA countries.

- a. Let existing LNG export terminals that are approved for shipment to NAFTA become operational and determine if the natural gas industry has the capability to increase production, transportation, and storage capacity without price increases and/or supply shortages that damage the U.S. economy.
- b. Conduct a rulemaking to define public interest with a priority on maximizing domestic job creation, not just GDP. Conduct a new economic study guided by the definition of public interest.

³ American Chemistry Council, 2016, “Economic Impact of Shale Gas Investments and the Chemical Industry”

⁴ EIA AEO 2017, <https://www.eia.gov/outlooks/aeo/pdf/0383%282017%29.pdf>.

IECA urges the DOE to place a moratorium on further approvals. It is a prudent and cautionary action. IECA has already demonstrated that LNG exports pass all risks onto the consumer and the economy, and if prices rise it puts trillions of dollars of manufacturing assets and millions of high paying middle-class jobs at risk. Australia is a case in point. But also, that exports do not create a lot of jobs and that by placing a priority of using that gas in manufacturing, can create eight times more jobs.

The ability of the natural gas industry to ramp up production and sustain year-over-year production rates without higher prices has NEVER been tested. This is a gamble that the U.S. economy and its consumers cannot afford to lose. The Trump Administration has already supported a substantial increase in LNG exports that will benefit the gas industry. It is now time for the Administration to support those who voted for Trump, the taxpayer and the consumer by taking a cautionary approach.

The definition of public interest is at the core of this entire discussion for shipments to NAFTA countries. Yet, we cannot find where the DOE has articulated any such definition. More concerning is that a Government Accountability Office (GAO) report reached the same conclusion.⁵ The report finds that neither the NGA, nor the DOE, has defined public interest (see page 10 of the report). Given the centrality of this issue to the public policy decision of approving or not approving LNG export applications, this is a glaring omission, if not a legal issue.

If the DOE has not defined public interest, how is it that they can make informed decisions on behalf of the over 72 million⁶ consumers of natural gas and 145 million⁷ consumers of electricity? Without a definition of the public interest, how does the DOE determine when the export volume from the next incremental LNG export application, and the resulting increase in natural gas and electricity prices, or a slowdown in manufacturing job creation and investment, justifies a disapproval of the LNG export application? Without a definition of public interest, how much public hardship must be inflicted before the DOE denies the next application?

IECA urges the DOE to establish a rulemaking process that is transparent and provides opportunities for public input on the definition of the public interest. With a definition of public interest and complete peer-reviewed economic studies to determine whether further LNG exports, whether already approved or not, are consistent with the public interest is needed. None of the DOE export studies were peer-reviewed, even though they rise to the level of economic importance that would have justified it.

As stated above, Congress, nor the DOE, has defined the public interest. Instead, DOE is using guidelines developed in 1984 for LNG imports to inform LNG export public interest decisions.

Criteria created in 1984 for decision making on LNG imports should not be used to

⁵ "Federal Approval Process for Liquefied Natural Gas Exports," Government Accountability Office, <http://www.gao.gov/assets/670/666177.pdf>.

⁶ http://www.eia.gov/dnav/ng/ng_cons_num_dcunusa.htm.

⁷ http://www.eia.gov/electricity/sales_revenue_price/pdf/table1.pdf.

inform decision making on LNG exports. LNG imports reduce risks to domestic consumers while LNG exports increase risks. The DOE guidelines have been modified over time (see below) but still do not sufficiently reflect the increased risks associated with substantial LNG exports.

- 1984 Policy Guidelines: <http://www.fe.doe.gov/programs/gasregulation/authorizations/policy.pdf>
- November 16, 1989 Order 350: <https://www.ferc.gov/industries/gas/indus-act/angtp/doe-order350.pdf>
- April 2, 1999 Order 1473: <https://www.ferc.gov/industries/gas/indus-act/angtp/doe1473.pdf>
- June 1, 2017 Order 4028: https://fossil.energy.gov/ng_regulation/sites/default/files/programs/gasregulation/authorizations/ord4028.pdf

The LNG export studies conducted by the Obama Administration's DOE consistently failed to adequately address public interest concerns, especially for the manufacturing sector and the EITE industries.

The most glaring omission and failure of the Obama Administration studies was to cumulatively account for increased LNG exports to both NAFTA and FTA countries. The studies only considered the impact for volumes to NAFTA countries. More than twice the volume is approved for FTA countries and these volumes, in addition to domestic demand, were not included in any of the studies.

This first EIA report dated January 2012 admits on page 5 that the "Macroeconomic results have not been included in the analysis because energy exports are not explicitly represented in the NEMS macroeconomic model."⁸ This means that the economic cost impact of LNG exports are not reflected in their estimated impact to energy-intensive industries. "For energy-intensive industries, the price of energy is particularly important to utilization decisions for existing plants and siting decisions for new ones. Given its domestic focus, however, NEMS does not account for the impact of energy price changes on global utilization pattern of existing capacity or siting of new capacity inside or outside of the United States in energy-intensive industries. Capturing these linkages requires an international model of the particular industry in question, paired with a global macroeconomic model."

The second report produced by NERA stated that there was net economic benefit, but that net economic gain was only \$20 billion by 2020 at its peak, and would decline every year. Given that the U.S. is a \$19 trillion economy, a \$20 billion gain is less than one hour of GDP work and is within error of the model's capability. It also said that the gains were concentrated in the oil and gas industry. The report concludes that "**expansion of LNG exports has two major effects on income: it raises energy costs and, in the process, depresses both real wages and the return on capital in all other industries.**"⁹ In our opinion, depressing real wages on the total U.S.

⁸ EIA: Effect of Increased Levels of Liquefied Natural Gas Exports on U.S. Energy Markets

⁹ NERA: Macroeconomic Impacts of Increased LNG Exports from the United States

population and a reduction of return on capital on all U.S. industries would conclude that increasing LNG exports cannot possibly be in the public interest. Finally, the study used outdated information on energy-intensive industries, the largest consumers of natural gas, our contribution to GDP, and how many people we employ. Because of this, the study underreported the negative impacts to the economy and jobs.

The third report dated October 2015¹⁰ also included serious flaws. The report said that LNG exports increase domestic prices and decrease prices to foreign countries, especially in Asia (see page 8). The report failed to combine the relative loss of manufacturing competitiveness from higher domestic natural gas prices and the lowering of natural gas prices to our competitors in Asia. This means that the report underreported the negative economic impact of increased LNG exports.

3. DOE should implement its authority under the NGA to establish a process of ongoing monitoring of economic impacts of LNG export volumes, and with the ability to reduce LNG export volumes for purposes of establishing a safety valve for U.S. consumers and the economic welfare of the country. DOE should conduct economic impact evaluations no less than every two years. DOE should condition all export applications.

When Congress passed the NGA, it assumed that adjustments to LNG exports would also be in the public interest when it states that the DOE “may from time to time, after opportunity for hearing, and for good cause shown, make such supplemental order in the premises as it may find necessary or appropriate.”¹¹ Contrary to the NGA, the Obama Administration did not plan to make any such adjustments. Rather, they stated that once it issues an order regarding LNG exports, it will not alter them. In fact, they stated that they would make such an adjustment only under “extraordinary circumstances.”¹² These extraordinary circumstances did not include high prices of natural gas that negatively impact the economy and jobs. The DOE creates an obstacle to the exercise of its authority that is not consistent with the law. Consequently, these DOE LNG export application approvals on LNG exports are fixed for periods of 20 to 30 years, substantially increasing risk to the economy and its workers, for no reason.

All LNG exports, whether to NFTA or FTA countries should be conditioned, to make clear that the federal government can reduce export volumes in the event that there is a finding that there are insufficient supplies and that domestic consumers have been damaged by higher prices.

Australia, a Cautionary Tale for the United States

The Australian government has just implemented a new regulation that will go into effect in July 2017 to curb LNG exporters’ market power, which resulted in very high domestic natural gas prices. Those documents include: Customs (Prohibited Exports) (Operation of the Australian Domestic Gas Security Mechanism) Guidelines for 2017, and the Customs (Prohibited Exports) Amendment (Liquified Natural Gas) Regulations 2017.¹³

¹⁰ Oxford Economics, Rice University: The Macroeconomic Impact of Increased U.S. LNG Exports

¹¹ 15 U.S. Code § 717b - Exportation or importation of natural gas (a) mandatory authorization order.

¹² DOE Letter to Senator Lisa Murkowski, October 17, 2013.

¹³ Australia: Customs (Prohibited Exports) (Operation of the Australian Domestic Gas Security Mechanism) Guidelines 2017

The new regulation gives the Australian government the ability to reduce LNG export volumes if there is a finding that there are insufficient supplies for the domestic market. The government can then require LNG exporters to reduce export volumes.

However, the new regulation fails to take care of its citizens and natural gas consumers. Page 6 of the report addresses how it deals with the domestic price of natural gas and states, that “Australian gas consumers should, on average, pay no more for their gas than the value of that same gas if sold for export (for example, netback price).” This means Australian consumers will pay the global price for LNG, less transportation and through-put charges. The Australian government has given away its natural resource advantage to foreign countries to the detriment of its domestic consumers and manufacturing sector.

What happened in Australia is a good example of why it is vital for the U.S. to put in place safeguards, or in other words, a safety valve. Australia illustrates the reality that prices can be impacted by unanticipated domestic or global events that include increased demand, decreased natural gas production, and market power of LNG exporters or LNG importers. It is the federal government’s responsibility to support a reasoned amount of LNG exports, while ensuring the health of domestic markets. Today, there is no safeguard and the U.S. needs to heed Australia’s warning.

Even though Australia has significant natural gas resources, LNG exports have driven prices to global levels which has increased domestic prices of natural gas and power, and has decreased manufacturing jobs. Because of natural gas and electricity price risks, Australia manufacturing asset values have declined and there is no investment by its manufacturing sector.

The Australian government did not put safeguards in place. Without any limitations placed on them by the government, Australian LNG exporters contracted almost all of Australia’s natural gas to foreign buyers, leaving insufficient supplies for the domestic market. Since LNG exporters controlled the Australian gas market, they refused to sell natural gas to the domestic market at prices less than what they could get by selling to foreign governments. The manufacturing sector became significantly damaged and jobs were lost. Power companies switched from natural gas to coal. Homeowners saw both significant price increases in natural gas and power.

The Australian government handed over their sovereign natural gas resources to multinational oil and gas companies whose objective is to maximize shareholder value. The Australian government trusted the oil and gas industry, who assured the government that supplies would be adequate to meet both export and domestic demand. Without a safety valve, in time, the same thing will happen here in the U.S. The U.S. oil and gas industry will say that the U.S. market is different and that it will not happen here – but that is simply not true.

4. DOE should condition all NFTA and FTA existing and new LNG applications. If they do not commence operation in five years, the facility should require re-permitting.

The economic well-being of the U.S. needs to be placed first, not last. This is the heart of President Trump's "America First" agenda. Approving an LNG export facility with an open-ended promise of access to America's natural gas is not in our economic best interests and increases all types of risk for the domestic consumer that cannot be anticipated today. Remember that LNG exports shifts all the risks to the U.S. economy and the consumer. These are the same citizens that voted for President Trump. All studies ever done have confirmed that LNG exports increase natural gas and electricity prices, damaging competitiveness of manufacturers, reducing wages and investment by all sectors, except oil and gas.

The long-term implications of this action are critical. For example, on the supply-side, a future president may act to establish policies and regulations that restrict natural gas production. A future president could establish policies that make drilling more expensive, thus increasing costs. Or, as in the state of New York, states may ban hydraulic fracturing. A new president may prevent drilling in offshore areas. State and environmental activists can impact the ability to build pipelines that would allow the gas to move from wells to the market. On the demand-side, and/or states could take dramatic action to reduce GHG emissions, thus dramatically increasing demand for natural gas to displace coal use in power generation.

5. The Trump Administration should not allow foreign governments to own, in whole or part, LNG export facilities or U.S. natural gas resources.

Foreign governments or entities owned in part or in full by foreign governments, or agents representing the interests of a government, or foreign electric or natural gas utilities, should be prohibited from owning U.S. LNG export terminals and natural resources. Their capital is state-owned capital and not free-market capital. Free-market capital cannot compete with state-owned capital.

Because securing natural gas resources for their country is strategic, many foreign governments that may be interested in investing in the U.S. that are not democracies, have not opened their markets to U.S. manufactured goods, and subsidize their manufacturers and electric utilities. Allowing such capital investment is inconsistent with democratic principles, free-market ideals, and fair trade.

There are also other potential important problems. Again, Australia is a case in point. They have allowed significant capital investment in their country from China, and now they face internal political challenges to running an efficient democracy along with security issues.¹⁴

IECA makes an important distinction between capital investment in LNG and natural gas resources and other investments. Natural gas is a non-renewable resource for which there is no substitute for the foreseeable future. It is a sovereign resource of the US and should be controlled as Congress intended. If prices rise, everyone in the U.S. is impacted. This

¹⁴ Washington Post: "In Australia, China is the meddler" June 15, 2017

distinguishes natural gas from investment in buildings and in competitive businesses which do not impact the entire country.

FIGURE 3: STATED FUTURE EMPLOYMENT BY LNG EXPORT TERMINALS

Export Facility	Permanent Jobs
Sabine Pass Liquefaction	580
Freeport LNG Expansion and FLNG Liquefaction	300
Lake Charles Exports	250
Dominion Cove Point	175
Jordan Cove Energy	150
Cameron LNG	185
Gulf Coast LNG Export	250

FIGURE 4: U.S. EMPLOYMENT

Year	Manufacturing (thousands)	Oil & Gas Extraction (thousands)
2010	11,528	158.7
2011	11,726	172.0
2012	11,927	187.4
2013	12,020	193.5
2014	12,185	197.7
2015	12,336	193.4
2016	12,348	180.0
Jobs Added	820	21.3

Source: U.S. Bureau of Labor Statistics (BLS)

FIGURE 5: U.S. NATURAL GAS – EIA AEO 2017 BASE CASE (TRILLION CUBIC FEET)

Year	Dry Production*	U.S. Consumption	Net LNG Exports	Net Exports to Mexico	Net Exports to Canada	Total Consumption
2016	26.5	27.5	0.09	1.4	-2.1	26.9
2017	27.9	27.9	0.5	1.2	-1.9	27.7
2018	29.1	28.1	1.0	1.6	-1.8	28.9
2019	30.1	27.9	1.8	1.7	-1.5	29.9
2020	30.8	27.3	2.9	1.8	-1.3	30.7
2021	31.0	27.2	3.0	1.8	-1.2	30.8
2022	31.3	27.2	3.1	1.7	-1.0	31.0
2023	31.8	27.4	3.3	1.7	-0.9	31.5
2024	32.4	27.8	3.5	1.8	-0.8	32.3
2025	33.1	28.3	3.6	1.8	-0.8	32.9
2026	33.6	28.7	3.8	1.8	-0.7	33.6
2027	34.0	28.8	3.9	1.8	-0.6	33.9
2028	34.3	29.0	4.0	1.8	-0.6	34.2
2029	34.7	29.3	4.0	1.7	-0.4	34.6
2030	34.9	29.5	4.0	1.7	-0.4	34.8

Year	Dry Production*	U.S. Consumption	Net LNG Exports	Net Exports to Mexico	Net Exports to Canada	Total Consumption
2031	35.0	29.4	4.1	1.7	-0.4	34.8
2032	35.3	29.7	4.2	1.7	-0.4	35.2
2033	35.5	29.8	4.3	1.7	-0.3	35.5
2034	36.0	30.2	4.3	1.6	-0.3	35.8
2035	36.5	30.7	4.4	1.6	-0.2	36.5
2036	36.7	30.8	4.4	1.6	-0.2	36.6
2037	37.1	31.2	4.4	1.6	-0.2	37.0
2038	37.4	31.5	4.4	1.6	-0.2	37.3
2039	37.6	31.7	4.4	1.6	-0.2	37.5
2040	37.7	31.9	4.4	1.5	-0.2	37.6
2041	38.0	32.2	4.4	1.5	-0.2	37.9
2042	38.2	32.4	4.4	1.5	-0.2	38.1
2043	38.3	32.6	4.4	1.5	-0.2	38.3
2044	38.6	32.9	4.4	1.5	-0.2	38.6
2045	38.9	33.2	4.4	1.4	-0.2	38.8
2046	39.1	33.5	4.4	1.4	-0.2	39.1
2047	39.4	33.8	4.4	1.4	-0.2	39.4
2048	39.6	34.0	4.4	1.4	-0.2	39.6
2049	39.8	34.2	4.4	1.4	-0.2	39.8
2050	40.3	34.6	4.4	1.3	-0.2	40.1
Total Consumption	1230.5	1062.2	129.79	55.8	-20.6	1227.2

Source: Energy Information Administration (EIA), AEO 2017

*The process of producing consumer-grade natural gas. Natural gas withdrawn from reservoirs is reduced by volumes used at the production (lease) site and by processing losses. Volumes used at the production site include (1) the volume returned to reservoirs in cycling, repressuring of oil reservoirs, and conservation operations; and (2) gas vented and flared. Processing losses include (1) nonhydrocarbon gases (e.g., water vapor, carbon dioxide, helium, hydrogen sulfide, and nitrogen) removed from the gas stream; and (2) gas converted to liquid form, such as lease condensate and plant liquids. Volumes of dry gas withdrawn from gas storage reservoirs are not considered part of production. Dry natural gas production equals marketed production less extraction loss.

FIGURE 6: EIA – TECHNICALLY RECOVERABLE U.S. NATURAL GAS RESOURCES (TRILLION CUBIC FEET)

	Proved Reserves	Unproved Reserves	Total Technically Recoverable Resources
Lower 48 (Onshore)	322.2	1,548.9	1,871.1
Lower 48 (Offshore)	8.7	316.2	324.9
TOTAL	330.9	1,865.1	2,196.0

Source: Technically recoverable U.S. dry natural gas resources as of January 1, 2014, Energy Information Administration (EIA) <https://www.eia.gov/outlooks/aeo/assumptions/pdf/oilgas.pdf>

Note: Data does not include Alaska (onshore and offshore).

FIGURE 7: EIA U.S. LNG EXPORTS, 2016

Country (2016)	Volume Shipped (million cubic feet)	% Total	Free Trade Agreement
Chile	29,405	16.0%	Yes
Mexico	27,845	15.1%	Yes
China	17,221	9.4%	
India	16,915	9.5%	
Argentina	16,661	9.4%	
Japan	11,137	6.1%	
South Korea	10,166	5.5%	Yes
Jordan	9,870	5.4%	Yes
Brazil	9,196	5.8%	
Turkey	8,762	4.8%	
Kuwait	7,068	3.8%	
Portugal	3,700	2.0%	
Egypt	3,606	2.0%	
United Arab Emirates	3,391	1.8%	
Italy	3,328	1.8%	
Dominican Republic	2,945	1.6%	Yes
Spain	2,930		
Barbados	100	0.1%	
Canada	2	0.001%	Yes
TOTAL	184,248	100%	
Total FTA	80,233	43.5%	
Total NFTA	104,015	56.5%	

Source: Energy Information Administration (EIA)