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# Liquefied Natural Gas in North America: An Analysis of the United States' Exportation Position in the Context of its North American Free Trade Agreement Partners

SEAN CUNNINGHAM

Liquefied natural gas is quickly emerging as a dominant player in the global energy trade. As more and more production terminals are built, the potential for its use in replacing more harmful fossil fuels grows. It has not only been touted as an important step in the stalling of global climate change, but also as a viable energy source for developing economies in Asia and Africa. Increasing production could effectively reduce the need for coal as an energy source in several regions of the world. The United States is at the forefront of the trade in this cryogenically stored fuel, but there are restrictions to the material's economic prosperity. The U.S. imposes limits on those countries with which it can trade liquefied natural gas, and requires permitting and petitioning to allow countries that do not meet their requirements to receive LNG shipments. Still, the United States is in a better position than its counterparts to the north and south when it comes to the export of LNG. Its comparative advantage rests in high volumes of surplus, a well-established

infrastructure and a fairly compliant regulation system. However, with continental, cross-border trading flows dictating the crux of LNG trade for the three North American partners, freezing each other out may result in severe harm to U.S. export markets. The North American Free Trade Agreement (NAFTA), which has been in effect for more than 20 years, has come under fire.<sup>1</sup> A main trade policy of the Trump Administration has been to renegotiate the trilateral deal so that it better benefits Americans. For the past several months, the trade ministers from Canada, the United States and Mexico have sat down to draft a new agreement, but the United States has stated it will walk away from the table if its demands are not met. This could spell disaster for the U.S., which would no longer be able to send gas to its primary importer, Mexico. The United States has the possibility to expand its market, exporting gas to Europe, Latin America and Southeast Asia. Unfortunately, American regulatory statutes stand in the way of the promotion of better opportunities for energy trade. The U.S. should look to reduce these regulations not only to benefit the economy, but to act as a failsafe should negotiations fall through.

## *Liquefied Natural Gas Production*

While most of the trade in natural gas occurs through pipeline transport, liquefied natural gas (LNG) is used to transport energy to and from regions that are not suitable for pipelines to traverse. In order to convert natural gas to its liquid form, it first must be extracted

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<sup>1</sup> Editors' note: This essay was written in early Spring 2018, months before the October 2018 conclusion of negotiations resulting in the United States-Mexico-Canada Trade Agreement (USMCA), the successor to the North American Free Trade Agreement (NAFTA). This scholarship provides scholarly insight into the subject that was available at that moment.

from the ground. This is done through a process known as hydraulic fracturing, or fracking.<sup>2</sup> Gas is naturally found in pockets that are encased in large deposits of shale deep underground. To remove the gas, a well is drilled into the ground, and a mixture of sand, water and chemicals are injected into a layer of shale. The rock subsequently splits, releasing the gas and remaining fluids, which are pumped to the surface. The blend is then piped to a terminal, where it is purified. Carbon dioxide, hydrogen sulfate and mercury, among other impurities are removed from the product, and it is cooled down to approximately -260°F. When condensed, the gas is 1/600<sup>th</sup> the size of its original volume, allowing greater quantities to be moved. LNG is then piped from the terminal to a transport truck or vessel and shipped to an import terminal where it is then stored, converted back into its gaseous state, and distributed to consumers.

Investments in LNG are costly and time consuming. It is estimated that more than 30% of the cost of running an LNG terminal rests in construction alone.<sup>3</sup> One of the projects most recently approved, the Driftwood Facility in Lake Charles, Louisiana, will cost more than \$15 billion dollars to build.<sup>4</sup> This site will be able to produce more than 27 million tons of LNG annually and will have four individual terminals.

It is expected that initial LNG production will begin in Lake Charles in 2022 and the complex will be fully operational by 2025. Shipments of LNG can be trucked across the continent, but they are more commonly transported in large vessels overseas. The tanker ships ferrying LNG are chartered five years before shipments commence, and they cost more than \$200 million to build.<sup>5</sup> Each ship is in service for approximately 35 years. These massive investments are not common and require a long-term commitment and market stability.

There are significant risks to the production of LNG. If the frozen product is leaked and comes into contact with water, it undergoes Rapid-Phase Transition.<sup>6</sup> This creates a massive explosion as the gas expands. Additionally, LNG is extremely flammable.<sup>7</sup> There are specific protocols in place on these transport vessels, including those prohibiting the use of electronic devices past the ship's bridge. When wielded improperly, LNG terminals and vessels could be commandeered for acts of terrorism or coercion, causing national security concerns. For a period following the September 11, 2001 attacks, LNG vessels were not allowed to enter Boston's Harbor for fear they would be turned into floating bombs.<sup>8</sup>

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<sup>2</sup> "What Is Fracking and Why Is It Controversial?," *BBC News UK* (2015), <http://www.bbc.com/news/uk-14432401>.

<sup>3</sup> Brian Songhurst, "LNG Plant Cost Escalation," Oxford Institute for Energy Studies (University of Oxford, 2014), [www.oxfordenergy.org/publications/lng-plant-cost-escalation/](http://www.oxfordenergy.org/publications/lng-plant-cost-escalation/).

<sup>4</sup> Joshua Mann, "Tellurian Makes \$15b Deal for Engineering and Construction of Flagship Lng Project," *Houston Business Journal* (2017), <https://www.bizjournals.com/houston/news/2017/11/13/tellurian-makes-15b-deal-for-engineering-and.html>.

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<sup>5</sup> Xun Yao Chen, "A Guide to Liquefied Natural Gas Carriers and Key Shipping Costs," (2014), <http://marketrealist.com/2014/05/expensive-lng-carriers-results-in-dividends/>.

<sup>6</sup> "Rlng Spill and Rapid-Phase Transition," KLaw LNG, <https://www.klawlng.com/lng-spill-and-rapid-phase-transition/>.

<sup>7</sup> "Consequence Assessment Methods for Incidents Involving Releases from Liquefied Natural Gas Carriers," *ABSG Consulting Inc.* (Federal Energy Regulatory Commission, 2014).

<sup>8</sup> Sam Fletcher, "Banned in Boston, LNG Tanker Will Unload in Savannah," *Oil and Gas Journal* (2001), <http://www.ogj.com/articles/2001/10/banned-in-boston-lng-tanker-will-unload-in-savannah.html>.

The environmental benefits of LNG are also subject to criticism. The energy source has been found to burn 50-60% less carbon dioxide than coal, which is a significant improvement when put into wide-scale use.<sup>9</sup> The methane leakage that is a byproduct of LNG production, however, is cause for concern. Its output, especially during transport, contributes to the increased levels of heat-trapping gases in the atmosphere. The use and exploitation of land that is required for fracking and the transport of natural gas has caused concern over loss of habitat, erosion, and aquatic pollution.<sup>10</sup> The location of these terminals and pipelines can cut right through animal migratory paths, causing further confusion for seasonal nomads. Additionally, significant negative externalities arise with respect to renewable resource production. While these resources are a cleaner source of energy and therefore are more desirable in the long term, they are also more expensive to produce and do not have the same storage capacity as natural gas. Since the price of LNG per output is cheaper, it is often seen as undercutting the renewable resource market.

### *LNG in the United States*

The history of the trade of liquefied natural gas in America has not always been so lucrative. The United States' first import facility was constructed in the late 1930s.<sup>11</sup> In 1944, there was an explosion at a terminal

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<sup>9</sup> "Cost and Performance Baseline for Fossil Energy Plants, Volume 1: Bituminous Coal and Natural Gas to Electricity", ed. National Energy Technology Laboratory (NETL) (United States Department of Energy, 2010).

<sup>10</sup> "Environmental Impacts of Natural Gas," (2017), <http://www.ucsusa.org/clean-energy/coal-and-other-fossil-fuels/environmental-impacts-of-natural-gas#references>.

<sup>11</sup> Michael L. O'Neill and Brian D. O'Neill, "U.S. LNG in the Global Marketplace" *ABA Infrastructure and Regulated Industries Section* 53, no. 4 (2014).

in Cleveland, when LNG leaked and then ignited. One hundred and thirty people were killed as a result of the disaster, and the construction of additional terminals in the country was delayed for more than a decade. The first export of LNG was sent to England from the Gulf of Mexico in 1959.<sup>12</sup> In the 1960s, there was discovery of natural gas deposits in Algeria, and terminals were constructed there to supply an energy-starved Europe. During this period, the United States began to export small amounts of LNG to Japan. By the 1970s, the U.S. had constructed four import terminals in Texas and Massachusetts. These terminals remained largely unused through the 1980s and 1990s because there was a decline in the need for natural gas. By the 2000s, the LNG trade had resumed and there was a desire for rapid increase of import facilities. As these facilities were being constructed, however, enormous amounts of natural gas deposits were discovered beneath U.S. soil. This led to an about-face, as investors began pouring money into their facilities to convert them to export terminals and scrambled to build storage facilities to store the surplus natural gas. It took time to convert these facilities, and the mass exportation of LNG did not begin until 2016.

As of December 2016, the Energy Institute of America (EIA) webpage estimates that the United States has more than 200 trillion cubic feet of known natural gas resources buried in shale deposits, and more than 600 trillion cubic feet that have yet to be proven.<sup>13</sup> In

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<sup>12</sup> Sydney Weathersby, "A Deep Dive into Liquefied Natural Gas ("LNG"): Is Lng a Clean Enough and Positive Energy Source for Globalized Trade or a Port Nuisance?," in *ValpoScholar* Valparaiso University (Valparaiso University Law Review, 2016).

<sup>13</sup> "Natural Gas Explained - Where Our Natural Gas Comes From," U.S. Energy Information Administration, [https://www.eia.gov/energyexplained/index.cfm?page=natural\\_gas\\_where](https://www.eia.gov/energyexplained/index.cfm?page=natural_gas_where).

2016, the United States was estimated to have used 27.49 trillion cubic feet of natural gas domestically, two thirds of which was used for electricity and industrial sectors and 88 billion cubic feet of which had been imported. The United States receives LNG from chiefly Trinidad and Tobago, however small shipments also make their way into the country via Norway and some is piped in from Canada.<sup>14</sup> The EIA estimates that the United States exported more than 180 billion cubic feet of LNG in 2016. Currently, the United States has only two operational export terminals. According to the U.S. Federal Energy Regulation Commission (FERC), the Cheniere/Sabine Pass terminal processes 2.1 billion cubic feet per day of liquefied natural gas.<sup>15</sup> As of August 28, 2017, there were 11 project applications pending with FERC.<sup>16</sup> These projects exist primarily in the Gulf of Mexico and there is one planned for Alaska. The EIA estimates the U.S. is projected to overtake Qatar as the world's second largest producer of LNG, falling just behind Australia by the year 2023.<sup>17</sup>

The United States government employs several agencies to deal with the regulation of LNG imports and exports. In 2005, the Energy Policy Act expanded

FERC to make the agency responsible for the siting, permitting, construction and operation of terminals.<sup>18</sup> The agency oversees 24 facilities, but many more are being proposed and in the process of being approved. There are state and local regulations that determine the existence of some terminals, however these parameters do not generally interfere with those of the federal government. Additionally, FERC is responsible for creating environmental assessments and impact statements for LNG proposals. These papers include the water and resource studies, effects on wildlife, as well as public commentary. Additionally, the Department of Energy employs the Office of Fossil Energy for the approval of any importing or exporting of natural gas.<sup>19</sup> As laid out in the Energy Policy Act of 1992:

the importation of the natural gas referred to in subsection (b), or the exportation of natural gas to a nation with which there is in effect a free trade agreement requiring national treatment for trade in natural gas, shall be deemed to be consistent with the public interest, and applications for such importation or exportation shall be granted without modification or delay.<sup>20</sup>

National treatment prevents discrimination favoring domestic companies when foreign competitors are allowed in, and it allows foreign enterprises to be treated like domestic companies. This also means that the Office of Fossil Energy has the authority to unilaterally

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<sup>14</sup> "Natural Gas Explained - Liquefied Natural Gas," U.S. Energy Information Administration, [https://www.eia.gov/energyexplained/index.cfm?page=natural\\_gas\\_lng](https://www.eia.gov/energyexplained/index.cfm?page=natural_gas_lng).

<sup>15</sup> Federal Energy Regulatory Commission, "North American LNG Import/Export Terminals - Existing," (U.S. Department of Energy, 2017).

<sup>16</sup> "North American LNG Export Terminals - Proposed," (U.S. Department of Energy, 2017).

<sup>17</sup> Nina Chestney, "U.S. On Track to Be World's No. 2 LNG Exporter by End-2022: IEA," Reuters (2017), <https://www.reuters.com/article/us-gas-lng-iea/u-s-on-track-to-be-worlds-no-2-lng-exporter-by-end-2022-iea-idUSKBN19Y0L1>.

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<sup>18</sup> "LNG," United States Department of Energy, <https://www.ferc.gov/industries/gas/indus-act/lng.asp>.

<sup>19</sup> O'Neill and O'Neill.

<sup>20</sup> Energy Policy Act of 1992, 102nd, H.R. 776.

block any trade of LNG that is not deemed to be in the public interest. It is entirely at the discretion of the Department of Energy to determine what does and does not constitute public interest. There are various other agencies that are required to oversee aspects of the industry. The Pipeline and Hazardous Materials Safety Administration, the Environmental Protection Agency and the Department of Transportation are all responsible for more specific areas of regulation. The Coast Guard is responsible for protecting offshore LNG terminals as well as the vessels that transport the gas through American waters. They require specific guidelines for ships and facilities to follow to prevent unnecessary disaster.

The expansion of LNG has been criticized by some groups, mainly the Industrial Energy Consumers of America (IECA). In August 2017, it sent a letter to the U.S. Secretary of Energy, Rick Perry, urging the government to cease all natural gas trade with countries that do not have a Free Trade Agreement with the United States. The letter claims: “The net effect is that LNG exports, specifically to [non-FTA] countries lowers our competitors’ costs and increases ours, directly and negatively impacting competitiveness and our ability to justify reshoring.”<sup>21</sup>

The letter also cites an EIA report that shows the approvals for exporting LNG reached 71.2% of the natural gas demand for the United States in 2016. The letter then lays out two scenarios in which most of the natural gas reserves in the country will be consumed by 2050, using these to justify their proposed moratorium. They

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<sup>21</sup> Cicio, Paul N. “Letter to Energy Secretary Rick Perry.” 16 August 2017.

believe that if the demand for gas grows as the supply diminishes, then consumer prices - both domestic and abroad - will continue to grow. The industrial sector is the second biggest consumer of natural gas domestically. This also plays into the Trump Administration’s narrative, “Buy American,” and its general skepticism of foreign trade.

What the IECA fails to acknowledge is the potential for increased prices at home, should the United States restrict energy flows. If the United States offers only LNG to FTA countries, the price will initially decrease. But as more of those countries become more heavily reliant on the importation of LNG as a cheaper alternative to harmful coal and oil emissions, then demand will continue to grow and the issue of price hikes for domestic consumers will reemerge. Furthermore the U.S. is not required to grant national treatment to foreign firms entering the country or purchasing gas from nations who do not have FTA status. This means that America can purposely keep prices higher for non-FTA countries as they import to offset the cost to domestic firms.

The Trump Administration should welcome the increased export of LNG to FTA and non-FTA countries alike. The owner of a newly authorized LNG factory in Louisiana has been a high-profile campaign donor to Energy Secretary Perry as well as being his former employer.<sup>22</sup> Ties like these to large petroleum companies could hasten the authorization of LNG

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<sup>22</sup> Luke Bassett, “Rick Perry’s Dirty Industry Donors and What They Could Mean for the Department of Energy,” 19 January 2017, <https://www.americanprogress.org/issues/green/news/2017/01/19/296807/rick-perrys-dirty-industry-donors-and-what-they-could-mean-for-the-department-of-energy/>.

permits. Secretary of Commerce, Wilbur Ross, brokered a deal with the Chinese that will lead to larger amounts of LNG being exported from the United States and this is essential.<sup>23</sup> Unfortunately, as the supply of natural gas has become greater, there is a lack of motivation to build new terminals. The capital has dried up because the price of the good is going down yet the costs of building facilities are also decreasing. If the U.S. can complete this deal, it is likely that an influx of investment from the Chinese will emerge as they look to meet their growing demand for energy. The former head of the Office of Fossil Energy, Christopher Smith refuted the idea that the Administration can accrue such an investment, claiming that it will have to be the private sector, not the government that will need to be responsible for luring in investors. Additionally, Trump has been heard touting the return of the coal and nuclear power industries. This has caused some LNG companies to feel excluded. As the CEO of Canary LLC, Dan Eberhart, put it in an *E&E News* article, “Honestly, I think it’s very narrow for them to be so focused on coal. Either energy - or political-wise, it doesn’t make a lot of sense to me. Not all of these policies seem to work in concert together. [Trump’s] trade policies step on American energy dominance.”<sup>24</sup>

Other advocates of LNG expansion include the U.S. Chamber of Commerce. It argues that restrictions on the export of LNG to non-FTA countries are in

direct violation of existing trade agreements.<sup>25</sup> Under the General Agreement on Tariffs and Trade (GATT), special discretion is given to countries that restrict their exports of natural resources for fear of depleting their supply, however because of the consistent supply of LNG being exported to countries with which the United States engages in free trade, the exemption is no longer valid. The GATT requires that all non-military goods be freely exported to member countries. There is a similar stipulation from the World Trade Organization. There are a series of successful WTO cases that have been levied against China over its restrictions on similar materials, some of which include the United States as a complainant. Additionally, during the past several sessions of Congress, senators have put forth bills that seek to expand the market for LNG. Previous bills have received bipartisan support and were aimed primarily at allowing exports to Japan and NATO allies without modifications or delayed approval; but none were passed. Most recently, Senators Bill Cassidy (R-LA) and Marco Rubio (R-FL) introduced a bill that would allow the transactions of small shipments of LNG to all countries immediately upon receipt of application.<sup>26</sup> Both Florida and Louisiana would stand to see substantial gains from the increased export of natural gas.

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<sup>25</sup> Brian Scheid to Platts Inside Energy, 2017, <https://www.globalenergyinstitute.org/could-any-limits-us-export-lng-violate-law>.

<sup>26</sup> Timothy Cama, “Senate Bill Would Fast-Track ‘Small-Scale’ Natural Gas Exports,” *The Hill* (2017), <http://thehill.com/policy/energy-environment/356033-senate-bill-would-fast-track-small-scale-natural-gas-exports>.

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<sup>23</sup> Peter Behr and Jenny Mandel, “LNG a Test Case for Trump’s Energy ‘Dominance,’” *Energywire* (2017), <https://www.eenews.net/stories/1060056968>.

<sup>24</sup> Zack Coleman, “‘America First’ or coal first? LNG groups want to know,” *E&E News*. 4 September 2018. <https://www.eenews.net/stories/1060095637>.

## Canadian LNG

In recent years, there have been a number of LNG projects proposed in Canada, and significant investments have been made in their planning and approval. Despite this, Canada has yet to emerge as an active participant in the increasingly competitive global LNG market, but proponents are still actively working on projects on both coasts.

– Shelly Milutinovic, *Chief Economist*, National Energy Board<sup>27</sup>

The trade in liquefied natural gas in Canada is stagnant at best. Canada has a significant surplus of the energy source, but its traditional export partner, the United States, is replacing its imports with domestic production. Canada has more than one trillion cubic feet of natural gas in shale deposits in British Columbia and Alberta alone.<sup>28</sup> Currently, only one LNG plant is in operation, an import terminal located in New Brunswick.<sup>29</sup> This terminal, Canaport LNG, is responsible for the production of more than 1 billion cubic feet of gas per day.<sup>30</sup> As of September 2017, 23 LNG terminal projects with export licenses had been proposed, with exporting

permits lasting anywhere from 20 to 40 years. Few have broken ground.<sup>31</sup>

The Canadian Government's National Energy Board is responsible for the review of applications for export permits. No countries are institutionally restricted from receiving LNG imports. The permits exist primarily to track the amount of LNG leaving the country, and to monitor the domestic supply to make sure there is enough to sustain Canada's energy needs. Additionally, jurisdictions vary for pipelines. Pipelines that run solely within a province are regulated by that provincial government, whereas interprovincial pipelines are regulated by the Federal government. Both the Federal and provincial governments are required to do environmental assessments on proposed projects. The overlap of the two competing spheres of government can discourage investment and draw out the application process. Given that constructing a terminal is time consuming, administrative delays can destroy working deals.

In July 2017, British Columbia lost a \$36 billion deal with the Malaysian energy company, Petronas, with the government citing global economic issues.<sup>32</sup> In actuality, a series of governmental blunders sank the otherwise lucrative deal. The previous provincial government had sluggishly negotiated with Petronas, due to a bevy of lawsuits by activists. When the provincial election of summer 2017, soon-to-be Premier John Horgan had campaigned fiercely against the deal.

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<sup>27</sup> "Canada a 'Late Entrant' to Global Liquefied Natural Gas Market, Says New Neb Report," Government of Canada, [https://www.canada.ca/en/national-energy-board/news/2017/07/canada\\_a\\_late\\_entranttogloballiquefiednaturalgasmarketsaysnewneb.html](https://www.canada.ca/en/national-energy-board/news/2017/07/canada_a_late_entranttogloballiquefiednaturalgasmarketsaysnewneb.html).

<sup>28</sup> "Canada's Role in the Global LNG Market – Energy Market Assessment," Government of Canada, <http://www.neb-one.gc.ca/nrg/sttsc/ntrlgs/rprt/2017lngmrkt/cndslnglndscp-eng.html>.

<sup>29</sup> Commission, "North American LNG Import/Export Terminals - Existing."

<sup>30</sup> "About Canaport Lng," Canaport LNG, <http://www.canaportlng.com/About+Canaport+LNG>.

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<sup>31</sup> "Canadian LNG Projects," Government of Canada, <http://www.nrcan.gc.ca/energy/natural-gas/5683>.

<sup>32</sup> Caludia Cattaneo, "A Tragedy for Canada: Petronas Cancels \$36b Lng Project as B.C. Jacks up Demands," *Financial Post*, 26 July 2017.



If elected, he promised to negotiate new terms, and potentially move the site of the project. Horgan's government then increased its demands in a new negotiation process. It wanted additional compensation for the resources being taken from the land, as well as increased incentives for affected First Nations. The stipulations caused Petronas to walk away from the negotiating table. This was not the only proposal that was canceled. There are six deals that have fallen through, each of which is listed on the government's website.<sup>33</sup> Complex regulatory frameworks severely reduce the ability of Canadians to install LNG terminals for exportation, which reduces their overall competitive advantage.

### *LNG in Mexico*

The energy infrastructure of Mexico is crumbling. Its inefficiencies have led to production decline across several industries within the energy sector.<sup>34</sup> Reforms have been slow and ineffective, causing the government to open the country to foreign companies, changing decades of precedent.

In 2013, the Mexican government amended its constitution so that private investment could take place in energy. The state-owned oil company, Petróleos Mexicanos (PEMEX), along with the Comisión Federal de Electricidad (CFE), the state-owned electric company, would no longer have a monopoly on energy

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<sup>33</sup> "Canadian LNG Projects."

<sup>34</sup> Adrian Duhalt, "Nafta Negotiations: What's in It for the U.S.-Mexico Energy Trade?" *Forbes* (2017), <https://www.forbes.com/sites/thebakersinstitute/2017/11/17/nafta-negotiations-whats-in-it-for-the-u-s-mexico-energy-trade/#192ac7993b24>.

in Mexico.<sup>35</sup> Conditions immediately following the reforms did not incentivize investment and low prices made foreign companies' importations unprofitable. There were internal tensions between PEMEX and CFE, which led to concerns over fair competition and stability within the region. Then, there was an uptick in investment, particularly from American companies, as surpluses of U.S. natural gas began to flow into Mexico rapidly. Mexico currently has three import terminals, receiving approximately 2.2 billion cubic feet of natural gas per day.<sup>36</sup> Between February 2016 and March 2017, 90 shipments of LNG were exported by the United States, 18 of which were sent to Mexico.<sup>37</sup> This makes at least 55% of Mexico's energy supply dependent on the importation of U.S. energy.

There are concerns looking ahead to the Mexican presidential election in 2018. Frontrunner, Andrés Manuel López Obrador, has been a staunch supporter of rolling back the energy reforms that have taken place in recent years.<sup>38</sup> This has been particularly worrisome to investors, who need certainty to partake in such lofty and time-sensitive investments. Existing investment commitments are also on the rise, with the Mexican Energy Secretary citing \$49 billion committed to drilling and exploration since 2015, a majority of which is

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<sup>35</sup> Havilands Sheldahl-Thomason and Richard H.K. Vietor, "Mexico's Energy Reform," Harvard Business School (2017).

<sup>36</sup> Commission, "North American LNG Import/Export Terminals - Existing."

<sup>37</sup> Jude Clemente, "Mexico Is Also Importing U.S. Liquefied Natural Gas," *Forbes* (2017), <https://www.forbes.com/sites/judeclemente/2017/04/05/mexico-is-also-importing-u-s-liquefied-natural-gas/#743c8bf4e292>.

<sup>38</sup> Nacha Cattan and Eric Martin, "Mexico Front-Runner Signals Plans to Maintain Parts of Economic Policy," *Bloomberg Politics* (2017), <https://www.bloomberg.com/news/articles/2017-11-21/mexico-s-amlo-signals-plans-to-maintain-parts-of-economic-policy>.

American.<sup>39</sup> ExxonMobil is committing \$300 million to distribution to Mexico over the next 10 years. Obrador has softened his stance, but is still calling for an increase in the development of domestic energy production. He wants to focus on reviving gasoline refineries to reduce the dependence on U.S. imports, but this may be problematic as they are all more than 35 years old and not profitable. Should Obrador win the election, there will be a considerable reevaluation of the contracts signed under previous president Enrique Peña Nieto to determine if they are in the “best interest of Mexico,” which creates caution among investors in the region.<sup>40</sup>

### ***A NAFTA Withdrawal***

President Trump has indicated that the United States could withdraw from NAFTA should the negotiation process fail to secure significant American benefits. The exit process would take approximately six months to go into effect.<sup>41</sup> This has ramifications across the board, but specifically for liquefied natural gas. The United States would no longer have a Free Trade Agreement with Mexico, and with Canada, the U.S. would fall back on the FTA signed in 1987. This would halt LNG exports to Mexico entirely, the chief importer of U.S. natural gas. Additionally, tariff rates would rise to the levels established under the WTO. This would mean tariffs that were generally 0 percent on almost all goods traded among the three countries could hit an average of

more than 7 percent in Mexico, 3 percent in the United States and 4 percent in Canada. There is no guarantee that, should the U.S. withdraw, the other two nations would be willing to return to negotiations, which could open the door for increased Canadian exports to Mexico as they build their LNG infrastructure to circumvent American isolationism. Increased tariffs could potentially reduce the demand for imported energy goods and increase the focus on self-sustainability, particularly in Mexico, reverting it back to an inefficient and archaic state-run system. It could also undercut the ability to use LNG to replace more harmful but cheaper fossil fuels, increasing the carbon dioxide output.

### ***Conclusion***

The United States has an opportunity to be an even bigger player in the trade of liquefied natural gas. As the world looks to develop, it must also be sustainable. That means pushing aside more old-fashioned forms of energy and focusing on those that are more affordable and widely accessible. Latin America, the Caribbean, and other developing regions of the world are increasing their demand for natural gas and the U.S. has the comparative advantage. With the largest shale gas deposit on the continent, the supply is enormous. The United States has significant infrastructure in LNG production already in place. This means stability to investors and companies looking to support projects. It also means the potential expansion of existing facilities to meet demands necessary for global output. Conversely, Canada lacks significant infrastructure to be a leading global exporter of LNG, but it has a significant surplus to export. While there is little restriction on shipping to

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<sup>39</sup> “Build Pipelines, Not Walls; Nafta and Energy,” *The Economist* (2017).

<sup>40</sup> Editors’ note: indeed, Obrador did win the 2018 election in Mexico. He assumed office on December 1.

<sup>41</sup> Ana Swanson and Kevin Granville, “What Would Happen If the U.S. Withdrew from Nafta,” *New York Times* (2017), <https://www.nytimes.com/2017/10/12/business/economy/what-would-happen-if-the-us-withdrew-from-nafta.html>.

most countries by the Government of Canada, the lack of facilities to support exportation means the United States has the ability to tap the market first, provided it can reduce its regulatory obstacles. The potential investment deal the United States has struck with China all but guarantees an inflow of capital for growing LNG exports, which Canada does not have. Mexico has no competitive advantage with either country. Its exportation infrastructure for LNG is non-existent and there is no known surplus of natural gas to export. If Mexico can tap into its reserves, the best it can do is convert energy production to domestic consumption and decrease its reliance on foreign imports of LNG. North America, through NAFTA and the rise of American natural gas production, is on track to become energy independent by 2020. This will allow the three countries to rely less on producers like the unstable Persian Gulf states and Venezuela. It drives costs down and creates a consistent supply of sustainable energy.

Whether or not the United States withdraws from NAFTA, it needs to relax the standards of trade in LNG. Barring grave concerns over national security, trade with non-FTA countries should be a priority for the Office of Fossil Energy. Not only is it a fail-safe against the potential loss of large export markets should the U.S. renege on trade deals, but it also provides sustainable development to countries who need energy infrastructure to progress. It incentivizes nations to ditch coal-burning energy production in the developing world, which should lead to cleaner development. The fears of large energy consumers can be curbed

partially by ensuring a consistent domestic supply no matter what the desired output may be, similar to the way the trade is handled in Canada. Additionally, those nations that lack free trade agreements with the U.S., once granted LNG exportation and importation privileges, would not necessarily have access to national treatment. This means the United States has the ability to inflate prices abroad to ensure there is no advantage given to foreign firms, promoting competition across various sectors. The United States has the capacity to be a sustainable energy provider to a larger section of the world. For the U.S. to ascend to the position of world's leading producer of liquefied natural gas, it is necessary to invest more heavily and publically in the infrastructure allowing exportation of the product on mass scales, and to expand the scope of export markets. This is vital to the stability and prosperity of the energy sector the economy.



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