Have We Missed Our Chance: U.S. LNG Exports in a World with Low Oil Prices

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INTRODUCTION

Relatively recently, there were concerns that traditional sources of natural gas would not keep up with the growing energy demands of the United States. Consequently, the U.S. energy market was focused on the importation of Liquefied Natural Gas (LNG). In response to the excess demand, the Federal Energy Regulatory Commission (FERC) received thirty applications to build LNG import terminals around 2008, six times the amount operating in 2007. However, as techniques for shale development improved, natural gas production began to outpace demand. In fact, production has increased to the point that there is now an opportunity for the United States to become a net exporter of natural gas.

Although the United States is in an ideal position to take on a larger role in the international natural gas market, LNG exporters have met many challenges. Projects face extensive licensing requirements both for exporting natural gas and the construction of LNG facilities. LNG export projects must also manage criticisms that LNG exports lead to potential economic, environ-
mental, and geo-political damages. Lastly, the recent fall in oil prices has seriously threatened the feasibility of LNG exports, adding yet another obstacle to the United States' participation in the international natural gas market.

This comment begins by providing the history and development of LNG. Next, Section II discusses the market for natural gas both domestically and internationally. Section III presents policy arguments for and against increased LNG exports. Section IV describes the current statutory and regulatory framework of LNG exports. Section V examines how the current U.S. licensing scheme could violate the United States' international trade agreements. Section VI analyzes the effects of low oil prices on natural gas markets. Finally, Section VII offers projections for natural gas exports and recommendations on how the United States could simplify the licensing process for LNG export applications in the future.

I. LNG AND ITS DEVELOPMENT IN THE UNITED STATES

Liquefied Natural Gas (LNG) is conventional natural gas that is cooled to the point it transforms from a vapor to a liquid. To produce LNG, natural gas is cooled to approximately -260°F, which condenses the gas to roughly 1/600th its original size. When extracted from the ground, natural gas is primarily composed of methane, but it contains other components, such as carbon dioxide and water. The first step in the LNG production process is to clean the natural gas by eliminating most of the components other than methane. Next, propane is used to precool the methane. Finally, a blend of refrigerants is introduced to the cooled methane, transforming the gas into a liquid. Once the process is complete, LNG is stored in insulated metal...
tanks, which keep the gas liquid.\textsuperscript{16} LNG is typically transported by large ships that can hold up to 266,000 cubic meters of LNG,\textsuperscript{17} roughly seven percent of the gas consumed in the United States on an average day.\textsuperscript{18} When natural gas is needed, LNG is converted back into a gaseous state by sending the liquid through heated pipes.\textsuperscript{19}

The condensed size of LNG allows the commodity to be shipped and stored more easily than conventional natural gas.\textsuperscript{20} While there are many ways to transport natural gas, pipelines have been the most common to transport large quantities.\textsuperscript{21} However, distance and varying geography limit the ability of pipelines to reach some markets.\textsuperscript{22} Liquefaction allows the shipment of large volumes of natural gas over greater distances to reach these "stranded" markets.\textsuperscript{23} Furthermore, the condensed nature of LNG allows the natural gas to be more efficiently stored when it reaches its destination.\textsuperscript{24}

While LNG may seem like a recent development, it was invented during the 19th century when British chemist and physicist Michael Faraday liquefied various types of gases.\textsuperscript{25} In 1873, Carl von Linde invented the first industrial-scale gas liquefaction machine.\textsuperscript{26} The first LNG plant was built in 1912, but a plant capable of commercial production was not built until 1941 in Cleveland.\textsuperscript{27} The Cleveland plant was designed to store LNG until winter, when customer demand increased.\textsuperscript{28} The project ended tragically when one

\begin{itemize}
  \item 16. \textit{Id.; Office of Fossil Energy, supra note 10.}
  \item 19. Hollis, \textit{supra} note 2, at 8.
  \item 24. O’Neill, \textit{supra} note 22.
  \item 25. \textit{See} Foss, \textit{supra} note 20, at 13.
  \item 26. \textit{See id.}
  \item 27. Baugh, \textit{supra} note 7, at 1.
  \item 28. The Oil Drum, \textit{supra} note 12.
\end{itemize}
of the tanks failed, leaking 1.2 million gallons of LNG into the city. In the aftermath of the disaster, which killed 128 people and destroyed thousands of homes, the LNG industry went dormant for several years.

Water transportation of LNG began with a joint venture between Continental Oil Co. and Union Stock and Transit Co. in the mid-1950s. The purpose of this venture was to ship LNG from the Gulf Coast to Chicago, where it would be vaporized and used for the food processing industry. However, this project was terminated when the U.S. Food and Drug Administration refused to permit this use of LNG due to fears of food contamination. In the late 1950s, the industry's attention turned toward international trade when an opportunity arose to sell LNG to the United Kingdom. In 1959, the Methane Pioneer, a converted World War II freighter, transported a shipment of LNG from Louisiana to England. The success of this project proved the feasibility of international shipments and encouraged the expansion of the industry.

In the late 1960s, the United States projected declines in the natural gas supply and companies introduced plans for importing LNG. In 1968, the Methane Pioneer brought the first shipment of LNG to the United States into the Boston Harbor. Natural gas prices increased in the late 1970s due to supply shortages. Consequently, there was another surge in proposals to import natural gas. Before these projects were completed, however, it became apparent that "the scarcity of natural gas in the U.S. marketplace was principally due to two factors: (1) counterproductive state and federal regulators of natural gas; and (2) the tendency of major oil companies to drill for oil and not natural gas because they considered gas more of a nuisance than a source of profit." Once regulations and laws were changed to address these issues, natural gas prices declined as the supply increased.
By the early 2000s, the United States was again anticipating a need for more natural gas.\textsuperscript{43} In fact, "the Energy Information Administration (EIA) projected a need to import 229 [billion cubic feet (Bcf)] by 2002, then doubling to 540 Bcf by the end of 2003."\textsuperscript{44} However, since only four import facilities existed at that time, it was expected that the United States would need to expand its import capabilities.\textsuperscript{45} Many import terminals were proposed, but most were never constructed.\textsuperscript{46} Due to regulatory challenges and changes to the U.S. natural gas market, even those that were constructed never received significant LNG imports.\textsuperscript{47}

II. DOMESTIC AND INTERNATIONAL NATURAL GAS MARKETS

A. U.S. Market

Less than ten years ago, the United States was primarily an LNG importer.\textsuperscript{48} High domestic natural gas prices led to imports of over 700 Bcf in 2007.\textsuperscript{49} This trend was expected to continue for the foreseeable future.\textsuperscript{50} However, there have been vast unanticipated changes in the United States natural gas market due to advances in horizontal drilling technology and the increased use of hydraulic fracturing.\textsuperscript{51} Hydraulic fracturing involves drilling a well and subsequently pumping hydraulically pressurized fluids into a geological formation.\textsuperscript{52} The pressure causes the rock to crack, creating fractures that are held open with a propping agent.\textsuperscript{53} These open fractures improve the flow of oil or natural gas, making unconventional resources economically viable.\textsuperscript{54}

Hydraulic fracturing has been used since the 1940s, but combining hydraulic fracturing and the more recently developed horizontal drilling tech-

\textsuperscript{43} Id.
\textsuperscript{44} Baugh, supra note 7, at 2.
\textsuperscript{45} Id. at 2–3.
\textsuperscript{46} Id. at 3.
\textsuperscript{47} Id.
\textsuperscript{48} See Hollis, supra note 2, at 6–7.
\textsuperscript{50} Hollis, supra note 2, at 9.
\textsuperscript{52} Hydraulic Fracturing Background Information, U.S. ENVTL. PROT. AGENCY, http://water.epa.gov/type/groundwater/uic/class2/hydraulicfracturing/wells_hydrowhat.cfm (last updated Oct. 19, 2015).
\textsuperscript{53} Id.
\textsuperscript{54} See id.
Technologies has dramatically increased the production of natural gas in the United States.\textsuperscript{55} In fact, production of natural gas increased from nineteen trillion cubic feet (Tcf) per year in 2006 to twenty-seven Tcf per year in 2014.\textsuperscript{56} This increase in domestic production has led to a substantial decline in natural gas imports.\textsuperscript{57} According to an EIA forecast, domestic production is growing faster than demand and by 2022 the United States could become a net exporter of natural gas.\textsuperscript{58}

Energy markets constantly fluctuate, a fact demonstrated by the recent fall in oil prices.\textsuperscript{59} Since June 2014, the price of oil has dropped roughly 50\% to around $50.\textsuperscript{60} Prices have been dropping for a variety of reasons, including: decrease of global demand, turmoil in several oil producing countries, the United States' increasing supply, and OPEC's unwillingness to limit production to stabilize the market.\textsuperscript{61} Additionally, the Iran Nuclear deal could further depress oil prices.\textsuperscript{62} These low oil prices' substantial effect on LNG exports is a topic explored in depth in Section VI.

B. International Market

Global demand for natural gas has been growing, particularly in developing economies.\textsuperscript{63} The largest import market by far is found in Asia—specifically Japan, South Korea, and China.\textsuperscript{64} Europe and South America also


\textsuperscript{57} Dixon & Panico, supra note 6, at 40.

\textsuperscript{58} Id. at 39.


\textsuperscript{60} Id.


\textsuperscript{62} Geoffrey Smith, Oil Prices Slide on Iran Nuclear Deal, TIME (July 14, 2015), http://time.com/3956883/iran-deal-oil/.

\textsuperscript{63} Noah T. Jaffe, Note, U.S. Natural Gas Exports are in the Public Interest: The Reasons and Ways that the Department of Energy Should Modify Its Standard for Reviewing Applications to Export Liquefied Natural Gas, 12 GEO. J.L. & PUB. POL'y 785, 789 (2014); Harmon, supra note 8, at 624.

import a significant amount of natural gas.\textsuperscript{65} The export market is currently dominated by just a few countries, including: Qatar, Malaysia, Australia, Nigeria, and Russia.\textsuperscript{66} Many of these countries have state-owned oil and gas firms, which gives them certain trade advantages.\textsuperscript{67} For example, they can make production and consumption decisions based only partially on economics.\textsuperscript{68} They also have much greater access to capital.\textsuperscript{69} However, these countries often have substantial exploration and production limitations, such as government interference or a lack of technology or infrastructure.\textsuperscript{70} The United States is relatively free from these limitations, putting it in a good position to capture a significant share of the international market.\textsuperscript{71}

C. Significant Differences Between Markets

One of the main differences between the U.S. and international natural gas markets is the price of natural gas.\textsuperscript{72} Over the past five years, the natural gas prices in the United States have generally stayed around \$4 per million British Thermal Unit (MMBtu).\textsuperscript{73} In stark contrast, European and Asian prices have been around three times U.S. prices.\textsuperscript{74} This vast variation in prices has led to great interest in exporting LNG from U.S. producers.\textsuperscript{75} Before the rise in domestic production suppressed U.S. prices, exporting LNG provided little economic incentive.\textsuperscript{76} However, large spreads cover liquefaction and transportation costs and then some, making exports very profitable.\textsuperscript{77}

\begin{itemize}
\item \textsuperscript{65} Id.
\item \textsuperscript{66} Id. at 8.
\item \textsuperscript{68} Id.
\item \textsuperscript{69} Id.
\item \textsuperscript{71} See Jaffe, supra note 63, at 790.
\item \textsuperscript{72} See Levi, supra note 67, at 5.
\item \textsuperscript{74} Goncalves, supra note 51, at 229.
\item \textsuperscript{75} Levi, supra note 67, at 8.
\item \textsuperscript{76} See id.
\item \textsuperscript{77} Goncalves, supra note 51, at 229.
\end{itemize}
Typically, due to competition, commodity prices will "converge with the marginal cost of supplying them. . . ."78 In other words, suppliers with a lower marginal cost of producing and delivering natural gas will push down prices, making U.S. exports uneconomic.79 A previous study suggested that the spread in prices would remain open for some time,80 but this study was done prior to the collapse of oil prices, which has narrowed the spread in prices significantly.81 Now the question is whether U.S. LNG exports can compete in this low oil price environment.

Another significant difference between markets is the pricing method used in natural gas contracts. For example, a large portion of international gas prices is indexed to oil prices.82 This means that the price of natural gas fluctuates with changes in the oil price.83 Recently, Europe has started to move away from oil indexing, but the practice is still prominent in Asia.84 On the other hand, natural gas transactions in the United States typically use spot prices.85 A spot price is simply the price at which a commodity can be transacted and delivered on right now.86 The most commonly used spot price is the U.S. Henry Hub Price.87 These indexing differences affect LNG contract structures between U.S. exporters and international buyers,88 and leave the spread in prices particularly susceptible a drop in oil prices.89

III. POLICY CONSIDERATIONS

Extensive controversy surrounds LNG exportation, and recently, the subject has been increasingly in the public spotlight. LNG exports would have significant impacts on the United States.90 Accordingly, there are pow-

79. Id.
80. See id.
81. Martén & Jiménez, supra note 9, at 2.
83. See Andy Hilleary, Natural Gas Prices: Oil Indexed or Spot?, ENERGY ACUITY BLOG (Oct. 25, 2012), http://www.energyacuity.com/blog/bid/237108/Natural-Gas-Prices-Oil-Indexed-or-Spot.
85. Hilleary, supra note 83.
88. See id. at 237–40.
89. Martén & Jiménez, supra note 9, at 2.
ful partisans on both sides of the issue and the disagreements can be broken down into three main areas: economic, environmental, and geo-political.91

A. Economic Impacts

One incentive of increasing LNG exports is the apparent financial opportunity for natural gas producers.92 The EIA has estimated that from 2015 to 2032, LNG exports could increase revenues to natural gas producers by $14 billion to $32 billion.93 Opponents, however, stress that negative economic effects are an issue as well.94 For example, the EIA found that increased LNG exports would lead to increased domestic natural gas prices.95 Critics argue that these higher natural gas prices could negatively affect the economy by forcing homeowners and other consumers to decrease their consumption.96 In particular, these critics fear that increased prices would hurt industries such as manufacturing that rely on cheap natural gas.97 However, these criticisms are largely unsubstantiated. Natural gas prices are expected to increase regardless of additional exports,98 and “any upward pressure on prices will be offset by a reduction in domestic price volatility.”99 Also, studies show that it is unlikely that price increases will significantly impact energy intensive industries.100 Lastly, an increase in domestic natural gas prices may actually be beneficial, because the current surplus of natural gas artificially depresses domestic prices.101 These artificially low prices lead to inef-

92. Wolcott, supra note 3, at 141.
93. EIA STUDY, supra note 90, at 16.
94. See Harmon, supra note 8, at 624.
95. EIA STUDY, supra note 90, at 6.
97. See Wolcott, supra note 3, at 156.
98. EIA STUDY, supra note 90, at 6.
100. Jaffe, supra note 63, at 795.
101. Kennedy, supra note 91, at 131–32.
ficiencies in the market, such as simply burning the gas at the well site because it is more economical to waste the gas than to produce it.  

Another potential economic impact of LNG exports is an increase in GDP. Selling domestic products to foreign entities serves as a “wealth transfer to the U.S. from abroad.” Even when taking into account the higher domestic natural gas prices, which would put downward pressure on any GDP increases, the U.S. GDP would increase because of greater LNG exports. Critics point out that while the GDP gains may seem large, they represent a very small percentage of the overall GDP. They argue that economic benefits apply mostly to oil and gas companies. Even when economic gains are limited to a small group, though, any increase in GDP can benefit a country.

Proponents and critics of increased LNG exports also disagree about the potential impacts on domestic employment. The U.S. Department of Energy (DOE), for instance, projected that increased exports “could create hundreds of thousands of jobs.” These jobs would theoretically come from the natural gas industry through increased production, processing, and transportation of natural gas, as well as from the construction and operation of the LNG facilities. However, opponents argue that these jobs would exist regardless of LNG exports because of the growing domestic demand for natural gas. Furthermore, any actual employment increases are likely to be offset by decreases in other market sectors due to the higher natural gas prices.

LNG exports could create several other possible economic benefits. For example, opening up international exports would provide an additional market for domestic gas that might not otherwise be produced. This would be beneficial when domestic demand is low. Also, studies show that increased

102. Jaffe, supra note 63, at 795.
103. Id. at 793.
105. Smith, supra note 96, at 263.
106. Id.
107. Wolcott, supra note 3, at 155.
108. Id.; Duncan, supra note 70, at 625.
110. Id.
112. Wolcott, supra note 3, at 154.
LNG exports would lead to higher aggregate consumption, which typically indicates “higher economic activity and more purchasing power for consumers.” Aggregate investment may also increase, although this would most likely occur only in the short term. Construction projects to build new LNG plants, or to convert current gasification plants to liquefaction plants will drive up investment, but eventually the higher natural gas prices will cause investment to balance out.

To address these economic concerns, the DOE commissioned a study to examine the macroeconomic effects of LNG exports (2012 LNG Export Study). The 2012 LNG Export Study consisted of two parts. The first part was conducted by the U.S. Energy Information Administration (EIA) and used strictly a U.S. and North America-based model. The second part of the study, conducted by National Economic Research Associates Economic Consulting (NERA), used a global model and utilized the EIA study in its analysis. Weighing the factors, the 2012 LNG Export Study concluded that in all scenarios, “the U.S. was projected to gain net economic benefits from allowing LNG exports.” Furthermore, the economic benefits continued to increase as exports increased. Although opponents claim the study has many flaws, the DOE continues to rely on it when reviewing applications.

B. Environmental Impacts

Several parties, such as the Sierra Club, strongly oppose the expansion of LNG exportation due to environmental concerns. However, until relatively recently, environmental groups welcomed the increased use of natural gas. This viewpoint existed because the groups saw natural gas as a bridge fuel, believing it to have fewer environmental impacts than conventional oil or coal. While “natural gas emits less carbon than coal at the point of combustion,” environmental groups now fear that when taking into account

113. NERA Study, supra note 104, at 57.
114. Id. at 58–59.
115. Id.
116. Id. at 1; see EIA Study, supra note 90, at 1.
118. Id.
119. NERA Study, supra note 104, at 1.
120. Id.
121. Wolcott, supra note 3, at 152.
122. Eldean, supra note 55, at 449.
123. Jaffe, supra note 63, at 796.
124. Eldean, supra note 55, at 441.
the emissions from the production of shale gas, natural gas could be more harmful than coal.125

One of the greatest concerns is that increased LNG exports will encourage more natural gas production in the United States. This increased production would require shale gas development through the use of fracing.126 Environmentalists, though, argue that increased production could lead to many negative effects.127 For instance, air pollution correlates with the level of natural gas production.128 The release of methane, which is roughly twenty times more hazardous than carbon dioxide, is particularly concerning.129 Methane not only emits during the production and distribution process, but it can also leak from LNG storage tanks.130

Natural gas production can also damage water resources. The fracing process uses an enormous amount of water, requiring up to five million gallons of water per well.131 In addition, the fluid used in fracing contains several additives that could potentially contaminate ground and surface water.132 Another concern involves the impact drilling sites can have on the surrounding community and natural landscape.133 For example, earthquakes have been linked to drilling operations.134 Lastly, some environmentalists worry that increased natural gas prices will lead to increased use of coal for electricity production.135

However, the environmental impact of LNG exportation may not be as bad as critics argue. An increase in LNG exports could cause several positive environmental impacts. First, the higher domestic prices associated with LNG exports will likely lead to a decrease in total energy consumption for the United States.136 Also, LNG exports could reduce the total amount of coal used globally.137 For instance, one effect of low natural gas prices in the United States is that coal exports to Europe have increased.138 Therefore, "the

125. Id.
126. Id. at 449.
127. Id.
128. Id.
129. Smith, supra note 96, at 265–66.
130. Id. at 266.
131. Wolcott, supra note 3, at 162.
133. Id. at 450.
134. Id.
135. Harmon, supra note 8, at 627.
136. EIA Study, supra note 90, at 18.
137. Eldean, supra note 55, at 452.
138. Id.
coal that is displaced by natural gas in the United States is still being burned elsewhere." Increased LNG exports could reduce the amount of coal being used internationally, by providing cheaper natural gas to other countries.

Environmental groups would prefer renewable energy sources substituted for natural gas. However, the low price of natural gas has hindered the growth of renewable energy. Historically, coal has been the main source for generating electricity in the United States. Due to the environmental consequences associated with coal, Congress and the states enacted several regulations that led coal plants to shut down unless they were improved or converted to natural gas plants. These regulations, along with state and federal programs reducing costs, have increased the use of renewable energy in the United States. However, despite all of these efforts, "the cost of renewable energy remains relatively high." Furthermore, the reduction in the use of coal left a portion of the market share open. Unfortunately for environmentalists, the EIA projected that renewable energy will only "capture approximately 1/3 of the potential market while natural gas is expected to capture 2/3 of that market." This is due to the fact that renewable energy remains much more costly than natural gas. Therefore, an increase in the price of natural gas in the United States may lead to renewable energy becoming more cost effective.

C. Geo-Political Impacts

The final policy consideration is the impact LNG exports could have on geo-political relations. On the one hand, critics of increased LNG exports argue that the United States should take advantage of this opportunity for energy security and energy independence. While the U.S. shale reserves should provide an ample supply of natural gas, "energy security requires reli-

139. Id.
140. Id.
141. Id.
142. Id.
143. Baugh, supra note 7, at 18.
144. Id.
145. Id.
146. Id. at 19.
147. Id. at 21.
148. Id.
149. Baugh, supra note 7, at 21.
150. Id.
151. Wolcott, supra note 3, at 159; Harmon, supra note 8, at 629.
able and affordable energy prices." Accordingly, the United States needs to ensure that it can maintain supplies of affordable natural gas in the event of an interruption in the international natural gas market. Currently, natural gas markets are regional, not global, so a disruption in foreign markets has little impact on domestic markets. Critics argue that increasing LNG exports places the United States at the mercy of volatile international markets, which could destabilize domestic prices.

Increasing LNG exports could also have broad implications for our relationships with foreign countries. First, we could strengthen relationships with our allies by providing them with cheaper, reliable energy. As some parties have pointed out, it would be hypocritical for the United States to place restrictions on other countries' natural gas imports while encouraging our allies to limit their imports from hostile countries. On a related note, increasing LNG exports could also disrupt the monopolies that some hostile nations hold over our allies. For example, many countries in Europe are highly dependent on Russia for natural gas. Russia has repeatedly exploited this dependency to influence foreign policy. Likewise, Iran has continued to use surrounding countries to circumvent U.S. sanctions. Because these countries are dependent on Iran for natural gas, it is difficult to get them to cooperate with U.S. sanctions. Lastly, Russia is trying to win contracts in East Asia to gain influence in the area. Increasing U.S. exports would help alleviate these hostile influences and increase American influence in the region.

IV. Statutory and Regulatory Framework

Much of the controversy related to LNG exports stems from the process of gaining permission from the appropriate agencies. LNG imports and exports are regulated at both the federal and state levels. This section will

152. Harmon, supra note 8, at 629.
153. Id.
154. Id.
155. Id.; Wolcott, supra note 3, at 159.
156. Wolcott, supra note 3, at 156.
157. See Baugh, supra note 7, at 17.
158. See Wolcott, supra note 3, at 156–57.
159. Id. at 157.
160. Id.
161. Jaffe, supra note 63, at 799.
162. Id. at 799.
163. Id.
discuss the licensing process for an LNG export project and examine the structure of federal and state requirements.

A. Authorization to Import/Export LNG

The Natural Gas Act of 1938 (NGA) governs the export and import of natural gas. Section 3 of the NGA gives the DOE’s Office of Fossil Energy the authority to grant authorization to import/export natural gas. Under the NGA, the general standard used when reviewing applications to import or export natural gas is the following:

No person shall export any natural gas from the United States to a foreign country or import any natural gas from a foreign country without first having secured an order of the Commission authorizing it to do so. The Commission shall issue such an order upon application, unless, after opportunity for hearing, it finds that the proposed exportation or importation will not be consistent with public interest. The Commission may by its order grant such application, in whole or in part, with such modification and upon such terms and conditions as the Commission may find necessary or appropriate, and 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.

Accordingly, individuals looking to export LNG from the United States must file an application with the DOE. The elements of the application are described in 10 C.F.R. § 590.202. An application must contain, among other things: (1) the exact legal name of the applicant; (2) the names, titles, and mailing addresses of a maximum of two persons for the official service list; (3) a statement describing the action sought from the DOE’s Office of Fossil Energy; (4) the justification for such actions and the reasons the action is not inconsistent with the public interest; and (5) the Office of Fossil Energy’s docket number, if applicable. In addition to these requirements, the applicant must include the following information to the extent that it is applicable: a statement describing the proposed scope of the project, including the volumes of natural gas involved, the dates of commencement and completion of the proposed import or export, and the facilities to be utilized or constructed; the source and security of the natural gas supply to be exported; identification of all the transactional participants; the terms of the transac-

166. Salo, supra note 1, at 67.
168. Salo, supra note 1, at 68.
169. 10 C.F.R. § 590.202(a) (2012); id.
170. 10 C.F.R. § 590.202(a).
tion; the lack of a national or regional need for the gas; and a statement regarding the potential environmental impacts of the project.\textsuperscript{171}

The focus of the DOE's review is whether or not a project is in the public interest.\textsuperscript{172} Previously, all natural gas applications were subject to the same review process, but that changed as the United States began to form free trade agreements (FTA) in the 1990s.\textsuperscript{173} With the Energy Policy Act of 1992, Congress created an expedited approval process for applications to import or export natural gas to countries with FTAs.\textsuperscript{174}

An FTA is an agreement between countries regarding certain obligations that affect trade.\textsuperscript{175} Under an FTA, a country will agree to give national treatment to another country's goods, meaning imported goods and locally-produced goods are treated equally.\textsuperscript{176} The countries with which the United States has FTAs requiring national treatment for trade in natural gas are: Australia, Bahrain, Canada, Chile, Columbia, Dominican Republic, El Salvador, Guatemala, Honduras, Jordan, Mexico, Morocco, Nicaragua, Oman, Panama, Peru, Republic of Korea, and Singapore.\textsuperscript{177} The goal of an FTA is to reduce barriers and to create a more stable trading environment.\textsuperscript{178} Accordingly, Congress justified the expedited approval process by declaring that it would encourage greater participation in the U.S. natural gas market.\textsuperscript{179}

Under the expedited approval process, an application to a country with an FTA that requires national treatment for trade in natural gas is automatically "deemed to be consistent with the public interest."\textsuperscript{180} Also such applications "shall be granted without modification or delay."\textsuperscript{181} Therefore, there is a "conclusive presumption, which cannot be overcome, that LNG exports to FTA countries are in the public interest."\textsuperscript{182} Since this conclusive presump-

\textsuperscript{171.} Id.
\textsuperscript{172.} See 15 U.S.C. § 717b(a).
\textsuperscript{173.} Harmon, supra note 8, at 619.
\textsuperscript{174.} Id.
\textsuperscript{178.} U.S. Free Trade Agreements, supra note 175.
\textsuperscript{179.} Harmon, supra note 8, at 619.
\textsuperscript{180.} 15 U.S.C. § 717b(c).
\textsuperscript{181.} Id.
\textsuperscript{182.} Wolcott, supra note 3, at 145–46.
tion generally allows the application to bypass the public notice and other hearing-type procedures, applications to FTA countries can receive approval in less than a month.\textsuperscript{183}

The application process to export natural gas to countries without an FTA is much more extensive. As these applications do not receive the benefit of an expedited review process, they are subject to the comprehensive public interest review.\textsuperscript{184} The DOE has consistently held that there is a rebuttable presumption that a proposed application is in the public interest.\textsuperscript{185} Therefore, opponents must overcome the presumption in order to stop an application from being granted.\textsuperscript{186} The DOE publishes notice of each application in the Federal Register and seeks feedback, which will be considered in determining public interest.\textsuperscript{187} Opponents must have at least thirty days to file such feedback, but the DOE typically provides a sixty-day comment period.\textsuperscript{188}

To determine if an application meets the public interest requirement, the DOE "conducts a public interest review."\textsuperscript{189} The NGA does not define the term "public interest,"\textsuperscript{190} and the only criteria the DOE explicitly considers is the domestic need for natural gas.\textsuperscript{191} However, the DOE will also consider a wide range of other factors including: energy security; impact on the economy, consumers, and industry; job creation; balance of trade; international considerations; environmental considerations; and consistency with the DOE’s policy of promoting competition in the marketplace through free trade.\textsuperscript{192} As can be seen by the policy discussion above, these factors are heavily debated.

One aspect of the DOE’s public interest review that has received significant attention recently is the environmental considerations element. Since issuing a license to export natural gas is a highly influential action by a federal agency, the DOE must comply with the National Environmental Policy Act (NEPA) and assess the potential environmental impacts of an application.\textsuperscript{193} To assess the environmental impacts of a project, the DOE may use the more rigorous Environmental Impact Statement (EIS), or an Environmental As-

\begin{itemize}
  \item \textsuperscript{183} Salo, \textit{supra} note 1, at 73.
  \item \textsuperscript{184} See 15 U.S.C. § 717b(a).
  \item \textsuperscript{185} Wolcott, \textit{supra} note 3, at 146.
  \item \textsuperscript{186} \textit{Id.}
  \item \textsuperscript{187} Salo, \textit{supra} note 1, at 76–77.
  \item \textsuperscript{188} \textit{Id.} at 77.
  \item \textsuperscript{189} Harmon, \textit{supra} note 8, at 620.
  \item \textsuperscript{190} Baugh, \textit{supra} note 7, at 5.
  \item \textsuperscript{191} Salo, \textit{supra} note 1, at 78.
  \item \textsuperscript{192} Harmon, \textit{supra} note 8, at 620–21.
  \item \textsuperscript{193} \textit{Id.} at 621.
\end{itemize}
essment (EA). Applications requiring major operational changes to facilities require an EIS, while all other applications simply require an EA. However, the DOE/FE often piggybacks on the environmental review of other agencies. For example, reviewing a recent application, the DOE allowed an application that would result in major operational changes to get a less extensive EA when the Federal Energy Regulatory Commission (FERC) already received an EIS for the same proposal. In response, environmental groups are pursuing legal action, which creates uncertainty about the environmental review required to receive a license from the DOE to export natural gas.

B. Construction and Operation of LNG Facilities

While the DOE has the authority to regulate the actual trade of LNG, either the FERC or the Maritime Administration and the U.S. Coast Guard regulate the LNG import or export facilities. If the actual facility is located within state waters, the FERC has approval authority and the NGA applies. If the facility is located beyond state waters, the Maritime Administration and the U.S. Coast Guard have approval authority and the Deepwater Port Act (DWPA) applies.

Through the DOE Act and section 3 of the NGA, the FERC has the exclusive authority over the “siting, construction, expansion, or operation of an LNG terminal.” Like the DOE, the FERC must make a public interest determination, although the process is much less intensive. When reviewing an application, the FERC considers whether the terminal “will improve access to supplies of natural gas, serve new market demand, enhance the reliability, security and/or flexibility of the applicant’s pipeline system, improve the dependability of international energy trade, or enhance competition within the United States for natural gas transportation or supply.” The FERC review balances public interests with adverse impacts. Therefore, if

194. Id.
195. Id.
196. See id. at 621–22.
197. Id.
198. Harmon, supra note 8, at 622.
200. Id.
201. Id.
203. Dixon & Panico, supra note 6, at 40.
204. 18 C.F.R. § 153.7 (2012).
no substantial adverse impacts are identified, the FERC allows the market to decide whether a project is constructed.206

While both the DOE/FE and the FERC have to comply with the National Environmental Policy Act (NEPA), the FERC is effectively the lead agency for environmental considerations.207 NEPA requires agencies to analyze the potential environmental impacts of proposed federal actions.208 As part of the NEPA review, an agency must either prepare an EA or an EIS.209 An EIS is a much more comprehensive analysis, as it must detail the environmental impacts of a proposed action as well as alternatives to the proposal.210 An EIS can cost millions of dollars to produce and take up to a year to complete.211 However, an EIS is only required when a project will constitute a "major federal action significantly affecting the quality of the human environment."212 Since many federal actions do not have significant impacts, agencies will often first develop a less detailed EA to determine whether an EIS is necessary.213

The FERC has a mandatory pre-filing process that requires applicants to begin the NEPA review process six-months prior to filing for authorization.214 This allows the FERC to identify critical issues early in the application process.215 Once the pre-filing requirements have been met, the FERC assigns the applicant a docket number, begins a preliminary review, shares information about the proposed terminal with the community, and holds meetings where the public can provide comments.216 Once the DOE and the FERC approve a project, it is the FERC's responsibility to monitor the construction and operations of the terminal.217

206. Id.
208. See 42 U.S.C. § 4332 (2012); Maureen O. Brill, Assessing the Scope of the National Environmental policy Act: Recent Attempts by Environmentalists to Add Climate Change Considerations into NEPA Review, 54 NAT. RESOURCES J. 409, 412 (2014).
209. Salo, supra note 1, at 92.
210. See 40 C.F.R. § 1502.2 (2012); Brill, supra note 208, at 412.
211. Salo, supra note 1, at 92.
212. 40 C.F.R. § 1502.3.
213. Brill, supra note 208, at 432.
215. Salo, supra note 1, at 91.
216. Id. at 92.
217. Baugh, supra note 7, at 8.
LNG terminals located on the Outer Continental Shelf (OCS) are governed by the DWPA instead of the NGA.\textsuperscript{218} There are several agencies that play a role in the licensing of an offshore LNG facility. First, the Maritime Administration (MARAD) makes the final decision “concerning proposals, licenses, construction, operation, and decommissioning.”\textsuperscript{219} In order to issue a license, the MARAD must determine the following: the applicant’s financial responsibility; that the applicant will follow applicable laws, regulations, and license conditions; whether the application will be in the national interest; that the application does not interfere with international navigation; and that the terminal will be constructed and operated using best available technology, so as to minimize the adverse impact on the environment.\textsuperscript{220} Next, the U.S. Coast Guard is responsible for promulgating regulations and is the lead agency for complying with NEPA.\textsuperscript{221} Finally, an offshore port will likely have to connect to onshore facilities. To obtain a license for these facilities, DWPA applicants must file a separate application with the FERC.\textsuperscript{222}

\section*{C. Recent Changes to DOE Application Process}

In August 2014, the DOE announced a procedural change in their application process.\textsuperscript{223} As described above, both the DOE and the FERC must complete a NEPA review, but the FERC is the lead agency for conducting the review and analyzing the environmental impacts of the project.\textsuperscript{224} The DOE’s previous practice was to issue a conditional authorization on a first come, first serve basis.\textsuperscript{225} Essentially, the DOE would choose an application based on the order it was received and start a preliminary analysis of all public interest factors, while excluding any environmental issues.\textsuperscript{226} The DOE would then grant a conditional authorization to export natural gas, contingent on the project receiving approval from the FERC.\textsuperscript{227} Once FERC approval was granted, the DOE would reconsider the public interest factors in

\begin{itemize}
\item \textsuperscript{219} Id. at 5–6; 33 U.S.C. § 1503 (2012).
\item \textsuperscript{220} 33 U.S.C. § 1503(c).
\item \textsuperscript{222} See Salo, \textit{supra} note 1, at 67.
\item \textsuperscript{224} Hagan, \textit{supra} note 207.
\item \textsuperscript{225} See Procedures, \textit{supra} note 223, at 48, 132; \textit{see also} Hagan, \textit{supra} note 207.
\item \textsuperscript{226} See Procedures, \textit{supra} note 223, at 48, 132–33.
\item \textsuperscript{227} See id. at 48, 133.
\end{itemize}
light of the FERC's environmental review, thereafter making its final
decision.228

In response to concerns that environmental factors were not being bal-
anced equally against all other public interest factors,229 the DOE is no longer
issuing conditional authorizations.230 Instead, the DOE now only considers a
project after the applicant has completed the FERC process.231 Furthermore,
the DOE is altering the order it analyzes applications.232 Instead of first
come, first serve; the DOE will review applications “in the order they be-
come ready for final action.”233 In doing so, the DOE hopes to prioritize more
advanced projects.234

D. State Regulations

The LNG regulatory process is not solely under federal control, as states
have various opportunities to intervene in the application process.235 For ex-
ample, under many of the federal authorizations, an applicant must comply
with various state regulations.236 States, then, may interfere, effectively veto-
ing an LNG project.237 Therefore, an applicant for an LNG import or export
terminal needs not only focus on DOE and FERC approval, but also must
consider the possible state regulatory hurdles that could derail the project.

V. POTENTIAL INTERNATIONAL TRADE LAW VIOLATIONS

The current regulatory process for LNG exports potentially violates re-
quirements under the General Agreement on Tariffs and Trade (GATT).238
The GATT is a multilateral agreement designed to promote international
trade by reducing barriers.239 Initially enacted in 1947, GATT was later re-
placed in 1995 by the WTO, which adopted the text of the original GATT.240

228. See id.
229. Wolcott, supra note 3, at 165, 167.
230. See Procedures, supra note 223, at 48, 132.
231. See id.; Hagan, supra note 207.
232. See Procedures, supra note 223, at 132–33; Hagan, supra note 207.
233. See Procedures, supra note 223, at 132–33; Hagan, supra note 207.
234. Hagan, supra note 207.
236. Id.
237. Id. at 10.
238. Eldean, supra note 55, at 453.
239. Id.
240. Id. at 453–54.
Most likely, any challenges to current U.S. policy would be brought under GATT Articles I or XI.241

A. GATT Article I - Most-Favored Nation Treatment

Under GATT Article I, if a country provides a benefit for any product coming from or going to a particular country, the same advantage must be given to every WTO member (known as the “most-favored nation” (MFN) treatment).242 For example, if the United States imposes import or export regulations that confer a benefit on one country, the United States must extend the same advantage to “like” products of every other WTO member.243 This requirement could potentially be violated by the expedited process currently in place for applications to countries with FTA agreements.

GATT does have exceptions to the MFN treatment.244 For example, Article XXIV allows countries to provide more favorable treatment to countries with which they maintain an agreement (such as an FTA).245 However, the WTO Appellate Body has held that while Article XXIV provides an exception to the MFN treatment, it does so only to the extent that it does not conflict with any other GATT provisions.246 As will be discussed below, the U.S. export restrictions on natural gas likely violate other requirements under GATT, so the exception may not apply.247

B. GATT Article XI – Elimination of Quantitative Restrictions

The limitation on natural gas exports may violate GATT Article XI, which generally bans quantitative restrictions on trade.248 The relevant provision of Article XI states:

No prohibitions or restrictions other than duties, taxes or other charges, whether made effective through quotas, import or export licenses or other measures, shall be instituted or maintained by any contracting party on the importation of any production of the territory of any other contracting party or on the exportation or

241. Smith, supra note 96, at 272–73.
244. Id. at 273; GATT, supra note 242, art. XXIV.
245. GATT, supra note 242, art. XXIV; Smith, supra note 96, at 273.
247. Smith, supra note 96, at 274.
248. GATT, supra note 242, art. XI.
sale for export of any product destined for the territory of any other contracting party.\textsuperscript{249}

While the current regulatory process for natural gas exports is not a prohibition, the public interest review may be interpreted as a restriction.\textsuperscript{250} The WTO Dispute Settlement Body has suggested, in many panels, that the term “restriction” should be interpreted broadly: a program must simply have an impact on trade to constitute a “restriction.”\textsuperscript{251} Based on decisions from the Dispute Settlement Body, an export licensing program is permissible if: (1) the prerequisites for obtaining a license do not have a limiting or restrictive effect, and the agency’s discretion in approving export applications is sufficiently limited; or (2) the program falls within one of GATT’s exceptions.\textsuperscript{252}

Initially, the test looks at whether the licensing system is restrictive. The first aspect to consider is the prerequisites for licensure.\textsuperscript{253} In the case of the DOE review, the application requirements are clearly set out.\textsuperscript{254} The regulations allow the DOE to require the applicant and other parties to make supplemental files of additional information; but this will likely not be seen as restrictive because there are limitations as to what items the agency can request.\textsuperscript{255} Therefore, the DOE does not have unilateral authority to request documents.\textsuperscript{256} Furthermore, the public disclosure requirements provide a check on the DOE’s discretion to arbitrarily request information.\textsuperscript{257}

While the application requirements may not be in violation of Article XI, it is possible that the public interest review is restrictive.\textsuperscript{258} The DOE must balance a wide range of factors, with little clarity on how each factor will be weighed.\textsuperscript{259} Additionally, the process of requiring an EA versus an EIS could lead to uncertainty as to how environmental considerations will be taken into consideration.\textsuperscript{260} These factors would likely violate the limitation

\textsuperscript{249} Id.
\textsuperscript{250} Harmon, supra note 8, at 631.
\textsuperscript{251} Id.; Smith, supra note 96, at 275.
\textsuperscript{253} Harmon, supra note 8, at 632.
\textsuperscript{254} 10 C.F.R. § 590.202 (2012); Harmon, supra note 8, at 633.
\textsuperscript{255} See id.
\textsuperscript{256} See Harmon, supra note 8, at 633.
\textsuperscript{257} Id. at 633–34.
\textsuperscript{258} Id. at 634.
\textsuperscript{259} Id. at 620–21, 634–35.
\textsuperscript{260} Id. at 635–36.
on agency discretion. Therefore, the current regulatory scheme creates uncertainty and likely is restrictive under Article XI.

Since the public interest review is likely restrictive, the next consideration is whether the violations fall within one of the GATT exceptions. Under Article XX, an export restriction is justified when significant sovereign interests are at stake. For example, Article XX(g) allows for the conservation of exhaustible natural resources, and Article XX(b) allows for the protection of human, animal, or plant life or health. For an Article XX exception to apply, the restriction must fall within the intent of the justification, and be applied in an even-handed way.

Article XX(g) allows a country to place restrictions on trade in order to conserve their natural resources. To use this exception the United States must show that: (1) a primary goal of the public interest review is conservation; (2) the measure that will actually achieve the conservation purpose; (3) there are comparable domestic requirements; (4) there are no less restrictive alternatives; and (5) the restriction is applied in an even-handed way.

The DOE’s public interest review likely meets the first two requirements. The application process clearly shows that the environmental concerns of the licensing process and reducing exports will avoid increases in natural gas production. However, the public interest review may violate the third requirement as there are no comparable domestic conditions. Next, as discussed above, splitting up the licensing process between two agencies may be more restrictive than placing sole authority in one agency. However, the U.S. licensing system will probably meet the fourth requirement because the WTO is unlikely to second-guess how a country allocates powers to agencies. Finally, the public interest review process may violate the even-handedness requirement due to the broad and unspecified weighing of factors. Without knowing exactly what factors are considered, and how they are weighed, there could be concerns of discrimination.

261. Harmon, supra note 8, at 631–32.
262. GATT, supra note 242, art. XX; Harmon, supra note 8, at 636.
263. GATT, supra note 242, art. XX(b), (g).
264. Id. art. XX; Harmon, supra note 8, at 636.
265. See GATT, supra note 242, art. XX(g).
266. Harmon, supra note 8, at 639.
267. Id. at 639–41.
268. Id.
269. Id. at 641.
270. Id. at 641–42.
271. Harmon, supra note 8, at 641–42.
272. Id. at 642.
273. Id.
Article XX(b) is another exception, which allows a restriction when it is “necessary to protect human, animal or plant life or health.”274 The primary focus when analyzing the public interests review is “whether the measure’s primary goal is environmental and public health interest oriented and whether the measure is ‘necessary’ to achieve the environmental and public health goal.”275 Whether a measure is necessary depends on how much the measure affects the goal, and the measure’s relative restrictiveness.276 Additionally, as with Article XX(g), the program must be applied in an even-handed manner.277

As discussed above, the DOE’s public interest review requirements will likely evidence that environmental impacts are a primary concern.278 Next, the United States must show that the policy is “necessary.” The first element of necessity is whether the program contributes to mitigating environmental impacts, which will likely be met “because the DOE can condition approval of an application on implementation of pollution control measures.”279 The next element is the program’s relative restrictiveness.280 As discussed above, while it may be less restrictive to have only one agency make the licensing decisions, the WTO is unlikely to second-guess the United States’ assignment of powers.281 The public interest review may violate the requirement of evenhandedness.282 The lack of clarity regarding the factors considered in the public interest review could allow different applications to be treated disproportionately.283

It is not clear yet how the WTO would interpret the public interest review. However, based on various decisions from the WTO Dispute Settlement Body, it is very possible that the public interest review and the overall treatment of applications to export natural gas could violate GATT requirements.284 Regardless, the risk that the United States could be in violation of our International agreements is reason enough to consider a change in the regulatory scheme affecting natural gas exports.

274. See GATT, supra note 242, art. XX(b); Harmon, supra note 8, at 642.
275. Harmon, supra note 8, at 642–43.
276. Id. at 643.
277. Id. at 642.
278. Id. at 644.
279. Id. at 644–45.
280. Id. at 645.
281. Harmon, supra note 8, at 645.
282. Id.
283. Id.
284. Id. at 631–32.
VI. Effects of Increased Oil Prices

Not long ago, United States’ LNG exports were projected to increase substantially.285 This prediction was based on the large spread between natural gas prices in the U.S. international markets, mainly in Asia and Europe.286 However, this competitive spread existed when the price of oil was $100 per barrel.287 Since mid-2014, oil prices have been cut in half, to around $50 per barrel.288 These changes in the price of oil are due to a variety of factors, but fundamentally the changes are caused by supply and demand.289 Global supply has increased more than demand.290 For example, the U.S. shale boom has brought in massive amounts of oil.291 Furthermore, the recent Iran nuclear deal will loosen sanctions on Iranian oil, likely pushing oil prices even lower.292 Examining how low oil prices affect natural gas markets internationally and domestically creates a picture of the future of United States LNG exports.

A. Changes in International Markets

The natural gas market of Asia, the region with the greatest demand growth, is perhaps the most affected by oil prices.293 As discussed above, Asia has typically relied on long-term, oil-indexed contracts.294 This means that oil prices directly impact natural gas prices.295 Accordingly, when oil was $100 per barrel, Asian buyers would pay $7.88 over the total cost to produce and ship United States LNG to Asia.296 However, lower oil prices drove down gas prices, and now, by the time United States LNG arrives in Asia, the price is roughly the same.297 Also, over the past several years there has been a desire among Asian LNG buyers for index diversification, with a

286. Id.
287. Id.
289. Why the Oil Price is Falling, supra note 61.
290. Id.
291. Id.
292. Smith, Oil Prices Slide, supra note 62.
293. Martén & Jiménez, supra note 9, at 4.
294. Id.
296. Id.
297. Id.
move away from oil to Henry Hub.298 This desire was particularly attractive when oil was $100 per barrel.299 However, as the price of oil has dropped, so has the perceived need for using U.S. LNG for diversification.300

Another market significantly impacted by the rising oil prices is Europe. Historically, European natural gas prices were oil indexed.301 Over the last few decades, however, Europe’s use of oil-indexed natural gas prices has decreased.302 While reliance on oil-indexed prices is not completely gone, a significant majority of natural gas volumes are now indexed to hub prices.303 Furthermore, Europe’s uses of hub-based prices are expected to increase.304 The effects of low oil prices on European natural gas prices will be quite different than in Asia.305 Because hub prices are completely disconnected from oil prices, fluctuations in the price of oil will not directly affect natural gas prices.306 However, with depressed prices in Asia, many countries could redirect their volumes to Europe and, thus, push down natural gas prices.307 Therefore, indirectly, low oil prices could severely threaten the profitability of U.S. LNG exports in Europe as well.

B. Changes in the United States Market

The first major impact on the U.S. market due to oil prices has been a fall in demand for natural gas exports.308 Recently, the EIA projected that United States LNG exports would exceed 70 Bcm in 2020.309 This optimistic prediction was based on the spreads between U.S. Henry Hub natural gas prices, and prices in Asia and Europe.310 A major reason for the wide spread was the high price of oil.311 However, since June 2014, oil prices have dropped roughly fifty percent.312 This drop has caused the spread between

298. Martén & Jiménez, supra note 9, at 5.
299. Id.
300. Id.
302. Id. at 238; Martén & Jiménez, supra note 9, at 5.
303. Goncalves, supra note 51, at 238; Martén & Jiménez, supra note 9, at 5.
304. Martén & Jiménez, supra note 9, at 5.
305. Id.
306. Id.
307. Id.
308. Id. at 1.
309. Id. at 2.
310. Martén & Jiménez, supra note 9, at 2.
311. Id.
312. Krauss, supra note 59.
U.S. and international natural gas prices to shrink dramatically.\textsuperscript{313} For example, when oil was $100 per barrel, the spread between the cost of United States LNG exports and Asian LNG import prices was between $6.40 and $7.60 per MMBtu.\textsuperscript{314} If oil prices remain at current levels, this price spread will shrink to between $.60 and $1.95 per MMBtu.\textsuperscript{315} Given the narrow spread and transportation costs, exporting LNG seems much less compelling than it once seemed.\textsuperscript{316} Projections for natural gas exports in 2020 have now dropped to 40–50 Bcm.\textsuperscript{317}

A result of the falling demand for exports is the delay or cancellation of many U. S. LNG projects.\textsuperscript{318} Mature projects that have already received DOE and FERC approval, and which have secured long-term commitments, will likely move forward because once investment decisions have been made, there is no going back.\textsuperscript{319} Projects will continue, but businesses will need to consider lower profits from LNG sales.\textsuperscript{320} Projects at earlier stages of development face a much more uncertain future.\textsuperscript{321} If a project has already secured long-term commitments it might advance, albeit with the potential for significant delays.\textsuperscript{322} Delays are common, as LNG projects require a significant amount of capital, but companies will be particularly reluctant to make investment decisions during times of uncertainty.\textsuperscript{323} Projects that have not secured long-term buyer commitments will likely be abandoned until spreads widen again.\textsuperscript{324}

Another significant effect of the low oil prices is a fall in the supply of natural gas, as oil and gas companies are likely to scale back development.\textsuperscript{325} Many projects began when the price of oil was $100 per barrel.\textsuperscript{326} With cur-

\footnotesize
\begin{itemize}
  \item \textsuperscript{313} Martén & Jiménez, supra note 9, at 2.
  \item \textsuperscript{314} Id.
  \item \textsuperscript{315} Id.
  \item \textsuperscript{316} Id.
  \item \textsuperscript{317} Id.
  \item \textsuperscript{318} Id.
  \item \textsuperscript{319} Martén & Jiménez, supra note 9, at 2.
  \item \textsuperscript{320} Nick Prowse et al., Weathering the Storm, LNG INDUSTRY (Apr. 16, 2015), http://www.lngindustry.com/special-reports/16042015/Weathering-the-storm-602/.
  \item \textsuperscript{321} Martén & Jiménez, supra note 9, at 2.
  \item \textsuperscript{322} Id.
  \item \textsuperscript{323} Prowse et al., supra note 320.
  \item \textsuperscript{324} Martén & Jiménez, supra note 9, at 2.
  \item \textsuperscript{325} Id. at 3.
  \item \textsuperscript{326} Id. at 4.
\end{itemize}
rent oil prices, these projects are less economical. The industry must "adapt its cost structures to the new pricing environment." In the meantime, investments will likely slow down. This issue is exacerbated by the fact that currently producing oil fields are less profitable, giving companies less cash to invest. Furthermore, a significant amount of natural gas comes from wet reservoirs. These projects were especially profitable because of the higher volume of natural-gas liquids. Low oil prices reduce these reservoirs' profitability, reducing the incentive to drill.

VII. PROJECTIONS AND RECOMMENDATIONS

The argument over U.S. LNG exports is unlikely to end soon. With the potential to be a net exporter of natural gas, parties will continue to battle for the ability to expand to different markets. Of course, many parties will also fight to limit exports as well. Despite the criticisms raised by opponents of increasing exports, it would be a good idea for the United States to alter its regulatory framework and allow natural gas to be exported more quickly and easily.

As discussed above, there are many reasons why natural gas exports would be a benefit. First of all, while there are concerns about the effect of natural gas exports on the domestic natural gas prices and the economy as a whole, these fears are unsupported. Any price increase will not substantially affect consumers and will help fix many market inefficiencies caused by artificially low natural gas prices. Furthermore, as the 2012 LNG Export Study showed, the United States would gain net economic benefits from allowing more LNG exports. Next, environmentalists argue that increasing LNG exports would harm the environment by encouraging more

327. Id.
328. Id.
329. Id.
331. Id.
332. Id.
333. Id.
334. See Kennedy, supra note 91, at 128.
335. See id. at 129–132.
336. See Smith, supra note 96, at 263.
337. See, e.g., EIA Study, supra note 90, at 6.
338. Jaffe, supra note 63, at 795.
339. Kennedy, supra note 91, at 131–32.
340. NERA Study, supra note 104, at 1.
natural gas production, but they ignore the other potential positive impacts exports could have. For example, higher domestic natural gas prices will allow renewable energy sources to develop and reduce the amount of coal used worldwide. Lastly, while there are several negative effects of fracing, fighting exports of natural gas is not the most effective way to combat these effects. The fracing process is relatively new, and is rapidly improving. As the technology improves, the negative effects will decrease. Furthermore, the United States would be more successful in regulating the actual fracing process rather than the products it creates. Finally, the United States has a rare opportunity to gain geopolitical influence in foreign energy markets, which would allow for stronger relationships with allies and disrupt the influence of hostile nations.

Not only are there policy arguments for easing restrictions on LNG exports, there are legal ones as well. The United States should be concerned about continuing to place restrictions on the exportation of natural gas due to its constitutional obligation to uphold binding international agreements. As discussed previously, whether or not the current restrictions would be in violation of certain international agreements is uncertain. What is clear is that to avoid such a risk, the framework for the licensing of natural gas exports should be changed. There have been several promising suggestions for how to revise the regulatory system to increase its efficiency and ensure compliance with international agreements.

One possible solution is for congress to eliminate the distinction between FTA and non-FTA countries. This distinction makes no practical difference and effectively serves only to draw out the licensing process. Another proposal is to remove the public interest determination in the Natural Gas Act and deem that all LNG exports are consistent with the public interest. This way, both FTA and non-FTA export applications would be treated the same. This would reduce government intervention in the licensing of LNG exports and allow the market to naturally regulate.

341. See, e.g., Eldean, supra note 55, at 449.
342. See, e.g., id. at 452.
343. Id.
344. Wolcott, supra note 3, at 156.
345. See Harmon, supra note 8, at 645.
346. See Wolcott, supra note 3, at 171.
347. See id.
348. See id.
349. See id.
350. See id.
351. See id. at 175.
seen from the recent fall in oil prices, the market has the ability to limit the amount of exports.\textsuperscript{352}

The DOE should also articulate better-defined criteria for the public interest review.\textsuperscript{353} The DOE needs to clearly define its goals, and issue rules to that effect.\textsuperscript{354} The current public interest criteria do not adequately simplify the review process.\textsuperscript{355} In addition to a list of criteria, the DOE should state how they plan to balance those factors.\textsuperscript{356} This would give all parties involved a clear view of how the public interest review is being conducted.\textsuperscript{357} These changes would allow the review process to move more quickly and remove any fears that the regulatory process is arbitrary.\textsuperscript{358}

While low oil prices have significantly affected the natural gas industry, some have pointed out that there is still hope for U.S. exports.\textsuperscript{359} An executive from Exxon Mobil Corporation spoke about the future of LNG trade.\textsuperscript{360} He advised that the current licensing process is difficult and needs to be changed.\textsuperscript{361} While conditions are tough, with the right regulatory change, the United States could still participate in the global LNG market.\textsuperscript{362} Furthermore, David Montgomery, who worked with NERA Economic Consulting on the 2012 Economic Impact Study, also spoke about the future of LNG exports in the low-oil price environment.\textsuperscript{363} The idea that United States LNG exports requires a wide spread between international and domestic prices is deceptive.\textsuperscript{364} When the United States entered the export market, the spreads would have quickly narrowed anyway.\textsuperscript{365} The real risk, according the Montgomery, is being late to the game.\textsuperscript{366} Whoever enters the market first will be able to scare off competitors.\textsuperscript{367} If the United States has a licensing process

\begin{footnotes}
\footnotetext[352]{See Martén & Jiménez, supra note 9, at 4.}
\footnotetext[353]{See Wolcott, supra note 3, at 171, 175.}
\footnotetext[354]{See id. at 175.}
\footnotetext[355]{See id. at 177.}
\footnotetext[356]{See id. at 176.}
\footnotetext[357]{See id.}
\footnotetext[358]{See id.}
\footnotetext[359]{Mandel, supra note 295.}
\footnotetext[360]{Id.}
\footnotetext[361]{Id.}
\footnotetext[362]{See id.}
\footnotetext[363]{See id.}
\footnotetext[364]{Id.}
\footnotetext[365]{Id.}
\footnotetext[366]{Mandel, supra note 295.}
\footnotetext[367]{Id.}
\end{footnotes}
that is longer than their competitors, developers may lose all ability to participate in the market.\textsuperscript{368}

Furthermore, The United States still has several advantages over their competitors.\textsuperscript{369} One is the low production costs and reliable supplies.\textsuperscript{370} Another advantage is the inherent flexibility in United States export contracts.\textsuperscript{371} U.S. supply contracts normally have "full volume flexibility [. . .] and flexibility to hedge feed gas price levels at Henry Hub."\textsuperscript{372} There is also typically no destination clause, so producers have the ability to redirect volumes to the location with the highest price.\textsuperscript{373} As a result, United States export flows will be an important factor in LNG supply.\textsuperscript{374}

**Conclusion**

Until relatively recently, the United States was debating the issue of LNG importation. Now, due to the growth of natural gas production, they are on the verge of becoming one of the largest LNG exporters in the world. The prospect of LNG exports has brought hope of substantial revenue for the United States, as new international markets would open up. However, export proposals have been mostly met with regulatory red tape and policy criticisms.

The growth of LNG exports has been slow, which is the result of a complicated and arbitrary statutory and regulatory system. The DOE continues to apply its antiquated public interest review, which requires an unnecessary distinction between FTA and non-FTA countries. Furthermore, this complex statutory and regulatory framework may violate obligations under international trade agreements.

Restrictions on the exportation of LNG are not likely in the best interest of the United States from a legal, environmental, or economic perspective. Although there are some potential negative impacts from an increase in the exportation of LNG, they will be balanced out by the gains from unrestricted international trade. LNG projects already face many challenges to entering into international markets, such as low oil prices. The United States should not put up even more hurdles to participating in international gas markets; it should make exports easier to allow for competition with other natural gas producers. Without a simplified regulatory framework, the United States will likely miss out on a unique opportunity for increased revenues and influence in global energy markets.

\textsuperscript{368} Id.
\textsuperscript{369} See Harmon, supra note 8, at 625.
\textsuperscript{370} See id.
\textsuperscript{371} See id.
\textsuperscript{372} Id. at 16.
\textsuperscript{373} Id.
\textsuperscript{374} Id. at 20.