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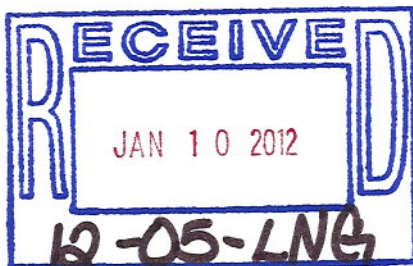
Brownstein Hyatt  
Farber Schreck

January 10, 2012

VIA COURIER

Mr. John Anderson  
Office of Fossil Energy [FE-34]  
U.S. Department of Energy  
1000 Independence Avenue, S.W.  
Washington, D.C. 20585

RE: In the Matter of Gulf Coast LNG Export, LLC  
FE Docket No. 12-05-LNG  
Application for Long-Term Authorization to Export Liquefied Natural Gas



Les Lo Baugh  
Attorney at Law  
310.500.4638 tel  
310.500.4602 fax  
LLoBaugh@bhfs.com

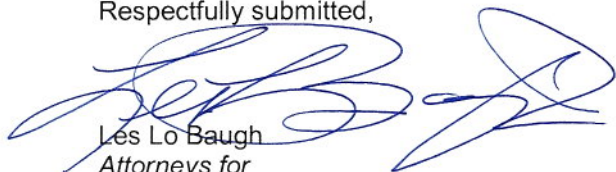
Dear Mr. Anderson:

Enclosed for filing on behalf of Gulf Coast LNG Export, LLC ("Gulf Coast"), please find an original and five (5) copies of Gulf Coast's application for long-term, multi-contract authorization to engage in exports up to the equivalent of 2.8 billion cubic feet per day, or 1022 billion cubic feet per year of liquefied natural gas ("LNG"). Authorization is sought for a 25-year period, to commence on the date of first export or 8 years from the date of issuance of the authorization requested by this application, whichever is sooner.

Gulf Coast proposes to export LNG from the United States to any country which has or in the future develops the capacity to import LNG via ocean-going carrier, and with which trade is not prohibited by U.S. law or policy. This application is filed separately from all other currently pending LNG export applications.

Gulf Coast respectfully requests that DOE/FE issue an order pursuant to Section 3 of the Natural Gas Act, for long-term, multi-contract authorization to export LNG.

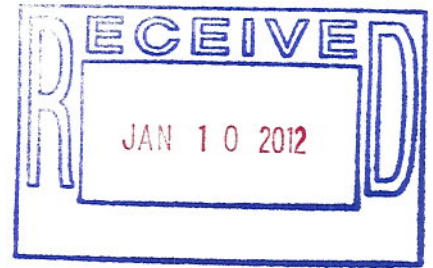
Respectfully submitted,



Les Lo Baugh  
Attorneys for  
Gulf Coast LNG Export, LLC

Enclosure  
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**UNITED STATES OF AMERICA  
BEFORE THE  
DEPARTMENT OF ENERGY  
OFFICE OF FOSSIL ENERGY**



**In the Matter of:  
Gulf Coast LNG Exports, LLC**

**Docket No. 12-05 - LNG**

**APPLICATION OF  
GULF COAST LNG EXPORTS, LLC  
FOR LONG-TERM AUTHORIZATION TO EXPORT LIQUEFIED NATURAL GAS**

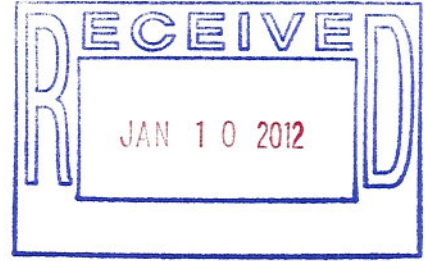
Communications with respect to this  
Application should be addressed to:

Les E. Lo Baugh, Esq.  
Brownstein Hyatt Farber Schreck, LLP  
2029 Century Park East, Suite 2100  
Los Angeles, CA 90067  
(310) 500-4638 (tel)  
(310) 500-4602 (fax)

Steven C. Demby, Esq.  
Brownstein Hyatt Farber Schreck, LLP  
410 Seventeenth St., Ste. 2200  
Denver, CO 80202  
(303) 223-1119 (tel)  
(303) 223-0919 (fax)

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January 10, 2012

UNITED STATES OF AMERICA  
BEFORE THE  
DEPARTMENT OF ENERGY  
OFFICE OF FOSSIL ENERGY

Gulf Coast LNG Exports, LLC.

DOCKET NO. 12-05 LNG

APPLICATION OF  
GULF COAST LNG EXPORTS, LLC  
FOR LONG-TERM AUTHORIZATION TO EXPORT LIQUEFIED NATURAL GAS

Gulf Coast LNG Exports, LLC (“Gulf Coast”) requests that the Department of Energy (“DOE”) Office of Fossil Energy (“FE”), grant a long-term, multi-contract authorization for Gulf Coast to export up to the equivalent of 2.8 billion cubic feet per day (Bcf/d), or 1022 billion cubic feet per year (Bcf/y)<sup>1</sup> of liquefied natural gas (“LNG”). Authorization is sought for a 25-year period, to commence on the date of first export or 8 years from the date of issuance of the authorization requested by this application, whichever is sooner. Gulf Coast proposes to export LNG from a natural gas liquefaction facility and LNG export terminal located at the Port of Brownsville in Brownsville, Texas to any country which has or in the future develops the capacity to import LNG via ocean-going carrier, and with which trade is not prohibited by U.S. law or policy.

Gulf Coast is aware that DOE/FE has initiated a study to determine the total volume of LNG exports clearly within the public interest. Based on the facts presented herein, Gulf Coast is confident that results of the DOE/FE study will support the issuance of an order finding that Gulf Coast’s requested export authorization is within the public interest. However, should

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<sup>1</sup> 2.8 Bcf/d is equivalent to approximately 2.878 trillion BTUs per day, according to a DOE/FE conversion factor of 1,028 BTUs per cubic foot found at <http://www.netl.doe.gov/energy-analyses/energy-calc.html>.

DOE/FE conclude that only a portion of Gulf Coast’s requested authorization quantity or term is in the public interest, Gulf Coast requests authorization for that alternative quantity or term.

This application is submitted pursuant to Section 3 of the Natural Gas Act (“NGA”),<sup>2</sup> Part 590 of the Regulations of the DOE,<sup>3</sup> and Section 201 of the Energy Policy Act of 1992.<sup>4</sup> In support of this application, applicants respectfully show as follows:

**I.**  
**COMMUNICATIONS AND CORRESPONDENCE**

Correspondence and communications regarding this application should be addressed to the following:

Les E. Lo Baugh, Esq.  
Brownstein Hyatt Farber Schreck, LLP  
2029 Century Park East, Suite 2100  
Los Angeles, CA 90067  
(310) 500-4638 (tel)  
(310) 500-4602 (fax)

Steven C. Demby, Esq.  
Brownstein Hyatt Farber Schreck, LLP  
410 Seventeenth St., Ste. 2200  
Denver, CO 80202  
(303) 223-1119 (tel)  
(303) 223-0919 (fax)

**II.**  
**DESCRIPTION OF THE APPLICANT**

The exact legal name of Gulf Coast is Gulf Coast LNG Export, LLC, a Delaware limited liability company. The principal place of business for Gulf Coast is located at 333 Clay Street, Suite 5050, Houston, Texas 77002. 97% of Gulf Coast stock is owned by Michael Smith, an individual. The Kaily Morgan Smith Irrevocable Trust and the Tara Marielle Smith Irrevocable Trust each own 1.5%. Mr. Smith is the founder and former Chairman and CEO of Basin Exploration Company. As the founder and current Chairman and CEO of Freeport LNG

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<sup>2</sup> 15 U.S.C. § 717b (2010).

<sup>3</sup> 10 C.F.R. § 590 (2010).

<sup>4</sup> Pub. L. No. 102-486, § 201, 106 Stat. 2776, 2866 (1992) (codified as amended at 15 U.S.C. § 717b(c) (2010)).

Development, L.P., Mr. Smith has been a leader in penetrating the global LNG market.<sup>5</sup> With his knowledge, experience, and connections in the global LNG market, Gulf Coast is well-positioned to capitalize on the growing demand for domestically produced natural gas.

### III.

#### **LNG EXPORT TERMINAL**

Gulf Coast proposes to develop, own and operate a natural gas liquefaction facility and LNG export terminal at the Port of Brownsville in Brownsville, Texas (the “Brownsville Terminal”). The Brownsville Terminal will consist of four trains capable of liquefying up to 2.8 Bcf/d of natural gas, a marine berth, full containment LNG storage tanks, a pipeline connecting to natural gas transportation lines, and associated utilities.

Within 180 days of DOE/FE’s order approving this application, Gulf Coast will initiate the process of FERC review for authorization to site, construct and operate of the Brownsville Terminal.

### IV.

#### **AUTHORIZATION REQUESTED**

Gulf Coast requests that DOE/FE grant a long-term, multi-contract authorization to export LNG from the export terminal at Brownsville, Texas to any country which has developed or in the future develops the capacity to import LNG via ocean-going carrier, and with which trade is not prohibited by U.S. law or policy. Gulf Coast requests this authorization for up to 2.8

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<sup>5</sup> See *Freeport LNG Development, L.P.*, FE Docket No. 08-70-LNG, Order No. 2644 (May 28, 2009); *Freeport LNG Development, L.P.*, FE Docket No. 08-70-LNG, Order Nos. 2644-A (September 22, 2009) and 2644-B (May 11, 2010); *Freeport LNG Expansion, L.P.*, FE Docket No. 10-150-LNG, Order No. 2884 (Dec. 01, 2010); *Freeport LNG Expansion, L.P.*, FE Docket No. 11-51-LNG, Order No. 2986 (Jul. 19, 2011); *Freeport LNG Expansion, L.P. and FLNG Liquefaction, LLC*, FE Docket 10-160-LNG, Order No. 2913 (Feb. 10, 2011); and *Freeport LNG Expansion, L.P. and FLNG Liquefaction, LLC*, FE Docket 10-161-LNG (Application Pending).

Bcf/d, or 1022 Bcf/y, of LNG, up to a total of 25.55 Tcf (the “Export Authorization”), over a 25-year term beginning on the date of first export or 8 years from the date of issuance of the authorization requested by this application, whichever is sooner. In the alternative, Gulf Coast requests authorization for that portion of Gulf Coast’s requested authorization quantity or term that DOE/FE determines to be in the public interest.

Rather than enter into long-term natural gas supply or LNG export contracts, Gulf Coast contemplates that its business model will be based primarily on Liquefaction Tolling Agreements (“LTA”), under which individual customers who hold title to natural gas will have the right to deliver that gas to Gulf Coast and receive LNG. In the current natural gas market, LTAs fulfill the role previously performed by long-term supply contracts, in that they provide stable commercial arrangements between companies involved in natural gas services.

Gulf Coast requests long-term, multi-contract authorization to engage in exports of LNG on its own behalf or as agent for others. Gulf Coast contemplates that the title holder at the point of export<sup>6</sup> may be Gulf Coast or one of Gulf Coast’s LTA customers, or another party that has purchased LNG from an LTA customer pursuant to a long-term contract. Gulf Coast requests authorization to register each LNG title holder for whom Gulf Coast seeks to export as agent, and proposes that this registration include a written statement by the title holder acknowledging and agreeing to comply with all applicable requirements included by DOE/FE in Gulf Coast’s export authorization, and to include those requirements in any subsequent purchase or sale agreement entered into by that title holder. In addition to its registration of any LNG title holder for whom Gulf Coast seeks to export as agent, Gulf Coast will file under seal with DOE/FE any relevant long-term commercial agreements between Gulf Coast and such LNG title holder,

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<sup>6</sup> LNG exports occur when the LNG is delivered to the flange of the LNG export vessel. *See The Dow Chemical Company*, FE Docket No. 10-57-LNG, Order No. 2859 at p. 7 (Oct. 5, 2010).

including LTAs, once they have been executed.<sup>7</sup> DOE/FE has previously found that this commitment conforms to the requirements of 10 C.F.R. § 590.202(b), which calls upon applicants to supply transaction-specific information “to the extent practicable.”<sup>8</sup>

Gulf Coast is aware of DOE/FE’s desire to ensure that all authorized exports are permitted and lawful under U.S. laws and policies, including the rules, regulations, orders, policies and other determinations of the Office of Foreign Assets Control of the U.S. Department of the Treasury.<sup>9</sup> Each of these goals of DOE can be efficiently and fully achieved through the arrangements proposed by Gulf Coast. Whether Gulf Coast acts on its own behalf or as agent for others, all parties involved in LNG Exports under the Export Authorization will have notice of all requirements in the export authorization order. As a result, DOE/FE will have each of the items of information it requires to fulfill its regulatory mandate.<sup>10</sup> This approach is responsive to real world market conditions and is fully compliant with the goals and intent of requirements of the applicable DOE regulations.

Pursuant to the National Environmental Policy Act (“NEPA”), FERC will be the lead agency for environmental review. Gulf Coast requests conditional authorization to export LNG from the Brownsville Terminal, pending FERC authorization to site, construct and operate it.

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<sup>7</sup> The practice of filing of contracts after the DOE/FE has granted export authorization is well-established. *See Yukon Pac. Corp.*, ERA Docket No. 87-68-LNG, Order No. 350 (Nov. 16, 1989); *Distrigas Corp.*, FE Docket No. 95-100-LNG, Order No. 1115, at 3 (Nov. 7, 1995); See also Freeport LNG Expansion, L.P. and FLNG Liquefaction, LLC, FE Docket No. 10-160-LNG, Order No. 2913 at 9-10 (Feb. 10, 2011).

<sup>8</sup> *Sabine Pass Liquefaction, LLC*, FE Docket 10-85-LNG, Order No. 2833 (September 7, 2010). 10 C.F.R. 590.202(b) requests certain information, “to the extent applicable,” and “supported to the extent practicable by necessary data or documents,” regarding the source and security of the natural gas supply proposed for export, including contract volume and a description of the specific gas reserves supporting the project during the time of the requested export authorization.

<sup>9</sup> *See The Dow Chemical Company*, FE Docket No. 10-57-LNG, Order No. 2859 at 7-8 (Oct. 5, 2010).

<sup>10</sup> *Id.*, at 7.



Such conditional authorizations are routinely issued by DOE/FE, which may review an application to determine whether a proposed authorization is in the public interest concurrent with FERC's environmental impact review.<sup>11</sup> Gulf Coast therefore requests that DOE/FE authorize the requested export of LNG produced from domestically sourced natural gas conditioned upon FERC's authorization of the Brownsville Terminal pursuant to NEPA.<sup>12</sup>

## V.

### EXPORT SOURCES

The natural gas supply underlying the proposed exports will come from the interconnected and highly liquid domestic market for natural gas. While some of the proposed export supply may be secured through long-term contracts, large volumes are likely to be acquired on the spot market.<sup>13</sup> Given the size and liquidity of the natural gas market in Texas, and the exponential growth of unconventional resources in the region, a diverse and reliable source of natural gas will be available to support the requested Export Authorization.

Natural gas markets are especially liquid in Texas because several key market centers in the area have ready access to incremental gas supplies from a wide variety of sources and readily available price information. The most publicized market hub in North America, the Henry Hub, is located in southern Louisiana, and the Houston Ship Channel and Katy Hub provide flexibility

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<sup>11</sup> See, e.g. *Import and Export of Natural Gas*, 46 Fed. Reg. 44,696 at 44,700 (Sep. 4, 1981); *Rochester Gas and Electric Corp.*, FE Docket No. 90-05-NG, Order No. 503 (May 16, 1991). 10 C.F.R. § 590.402 (2010)

<sup>12</sup> 10 C.F.R. § 590.402 (2010) (“The Assistant Secretary may issue a conditional order at any time during a proceeding prior to issuance of a final opinion and order. The conditional order shall include the basis for not issuing a final opinion and order at that time and a statement of findings and conclusions. The findings and conclusions shall be based solely on the official record of the proceeding.”)

<sup>13</sup> See, e.g., MIT ENERGY INITIATIVE, MIT STUDY ON THE FUTURE OF NATURAL GAS at 149 (2011) (noting that “a robust spot market has developed in the U.S. and Canada, with a price set by the forces of supply and demand”) (hereinafter “MIT REPORT”).

to natural gas shippers in Texas.

Domestic pipeline capacity has grown significantly in recent years, adding more than 80 Bcf/d of capacity between 2005 and 2008—with more than half of that added in 2008 alone.<sup>14</sup> Of the total natural gas pipeline capacity added in the United States in 2008, 4.6 Bcf/d (about 11%), was built to transport expanding Eagle Ford, Barnett and Haynesville shale formation production to local markets and to interconnections with the interstate natural gas pipeline network.<sup>15</sup>

## VI.

### **PUBLIC INTEREST**

#### **A. Applicable Legal Standard**

The DOE/FE has the power to approve or deny applications to export natural gas pursuant to specific authorization in Section 3 of the NGA.<sup>16</sup> In this application, Gulf Coast requests authorization for export to any country which has or in the future develops the capacity to import LNG via ocean-going carrier, and with which trade is not prohibited by U.S. law or policy. This includes countries with which the United States has a free trade agreement (FTA) requiring national treatment for trade in natural gas or LNG, as well as non-FTA countries. The relevant statutory authority requires that DOE/FE apply a different analysis of proposed exports to FTA versus non-FTA countries. Under either standard, however, DOE/FE should find the authorization requested by Gulf Coast to be in the public interest.

#### 1. FTA Countries: Section 3(c) of the Natural Gas Act

Pursuant to Section 3(c) of the Natural Gas Act, as amended by Section 201 of the

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<sup>14</sup> MIT REPORT, *supra* note 13, at 136 (2011).

<sup>15</sup> EIA, NATURAL GAS PIPELINES IN THE SOUTHWEST REGION, *available at* [http://www.eia.doe.gov/pub/oil\\_gas/natural\\_gas/analysis\\_publications/ngpipeline/southwest.html](http://www.eia.doe.gov/pub/oil_gas/natural_gas/analysis_publications/ngpipeline/southwest.html)

<sup>16</sup> 15 U.S.C. §717b. This authority is delegated to the Assistant Secretary for FE pursuant to Redefinition Order No. 00.002.04D (November 6, 2007)

Energy Policy Act of 1992, applications for export to FTA countries are deemed to be in the public interest and must be granted without modification or delay.<sup>17</sup> To the extent this application is for authorization to export to FTA countries, it is presumptively in the public interest. The long-term, multi contract export authorization is also compatible with the principles established by the Policy Guidelines and DOE Delegation Order No. 0204-111, discussed in greater detail in Section V(A)(2) below.

2. Non-FTA Countries: Section 3(a) of the Natural Gas Act

The general standards for review of export applications to non-FTA countries are established by Section 3(a), which provides that:

[N]o 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 [Secretary] authorizing it to do so. The [Secretary] shall issue such order upon application, unless, after opportunity for hearing, it finds that the proposed exportation or importation will not be consistent with the public interest. The [Secretary] may by its order grant such application, in whole or in part, with such modification and upon such terms and conditions as the [Secretary] 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.

In applying this statute, the DOE/FE has consistently ruled that it creates a rebuttable presumption that proposed exports of natural gas are in the public interest. Unless opponents of an export license make an affirmative showing based on evidence in the record that the export would be inconsistent with the public interest, DOE/FE must grant the export application.<sup>18</sup>

In evaluating whether the proposed exportation is within the public interest, DOE/FE

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<sup>17</sup> Pub. L. No. 102-486, § 201, 106 Stat. 2776, 2866 (1992) (codified as amended at 15 U.S.C. § 717b(c) (2010)).

<sup>18</sup> Order No. 1473, note 42 at 13, *citing Panhandle Producers and Royalty Owners Ass'n v. ERA*, 822 F.2d 1105, 1111 (D.C. Cir. 1987).

applies the principles established by the Policy Guidelines,<sup>19</sup> which promote free and open trade by minimizing federal control and involvement in energy markets, and DOE Delegation Order No. 0204-111, which requires “consideration of the domestic need for the gas to be exported.” As DOE/FE stated more recently in Order No. 2961, in which it authorized exports of LNG from the Sabine Pass LNG Terminal to countries with which the United States does not have an FTA:

[DOE’s] review of export applications in decisions under current delegated authority has continued to focus on the domestic need for the natural gas proposed to be exported; whether the proposed exports pose a threat to the security of domestic natural gas supplies; and any other issue determined to be appropriate, including whether the arrangement is consistent with DOE’s policy of promoting competition in the marketplace by allowing commercial parties to freely negotiate their own trade arrangements.

In determining whether a particular application to export is within the public interest, the principal focus of DOE/FE’s review is an analysis of the domestic need for natural gas proposed to be exported, and any other factors to the extent they are shown to be relevant to a public interest determination. As discussed below, Gulf Coast’s proposed exportation of domestically produced LNG serves the public interest.

**B. Public Interest Analysis**

As a result of technological advances, huge reserves of domestic shale gas that were previously infeasible or uneconomic to develop are now profitably producing natural gas in many regions of the United States. The United States is now estimated to have more natural gas resources than it can use in a century.<sup>20</sup> Large volumes of domestic shale gas reserves and

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<sup>19</sup> Policy Guidelines and Delegation Orders Relating to the Regulation of Imported Natural Gas, 49 Fed. Reg. 6,684 (Feb. 22, 1984).

<sup>20</sup> According to the EIA, the United States has 2,543 Tcf of total recoverable natural gas reserves, which is more than 105 times the total domestic consumption of 24.1 Tcf in 2010. U.S. ENERGY INFORMATION ADMINISTRATION, ANNUAL ENERGY OUTLOOK 2011 AT 79 (April 26, 2011), *available at*

continued low production costs will enable the United States to export LNG while also meeting domestic demand for natural gas for decades to come.

As U.S. natural gas reserves and production have risen, U.S. natural gas prices have fallen to the point where they are among the lowest in the developed world.<sup>21</sup> In Asia, LNG prices are indexed to crude oil prices and are generally higher than elsewhere in the world.<sup>22</sup> The lack of international natural gas pipelines in the region means that from a practical standpoint the industrialized countries, including Japan, Korea and Taiwan, are dependent upon LNG imports for their natural gas supplies. While Europe receives pipeline gas from various sources (mainly Russia), the long supply chains and relative inflexibility of markets have made diversification of supply a high priority.<sup>23</sup> Competitively priced LNG supplies from the U.S. will play a significant role in this diversification. Domestic natural gas prices in the U.S. are projected to remain low relative to European and Asian markets well into the future, making exports of LNG by vessel a viable long-term opportunity for the United States.

Gulf Coast is positioned to provide Texas, the Gulf Coast region, and the United States with significant economic benefits by increasing domestic natural gas production. The exportation of LNG will also create a material improvement in the United States' balance of trade. These benefits will be obtained with only a minimal effect on domestic natural gas prices.

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<http://www.eia.gov/forecasts/aeo/pdf/0383%282011%29.pdf> (hereinafter "EIA ANNUAL ENERGY OUTLOOK 2011"); EIA, ANNUAL ENERGY OUTLOOK 2011 REFERENCE CASE 22 (2011) *available at* [http://www.eia.gov/pressroom/presentations/newell\\_04272011.pdf](http://www.eia.gov/pressroom/presentations/newell_04272011.pdf).

<sup>21</sup> U.S. ENERGY INFORMATION ADMINISTRATION, NATURAL GAS PRICES FOR INDUSTRY (August 18, 2011) *available at* <http://www.eia.gov/emeu/international/ngasprii.html>.

<sup>22</sup> MIT REPORT, *supra* note 13, at 147 (2011); *see also* Hong Chou Hui, *The Asian LNG Market Strides Ahead*, PLATTS ASIA LNG (November 2011), *available at* <http://www.platts.com/IM.Platts.Content%5Caboutplatts%5Cmediacenter%5CAsianlng.pdf>

<sup>23</sup> MIT REPORT, *supra* note 13, at 152 (2011).

At current and forecasted rates of demand, the United States' natural gas reserves will meet demand for 100 years. The requested Export Authorization will allow the U.S. to benefit now from the natural gas resources that may not otherwise be produced for many decades, if ever.

The public interest will be served by:

- Direct and Indirect Job Creation:
  - **Construction Jobs:** More than 3,000 on-site engineering and construction jobs will be created during the five to six year design and construction period for the Brownsville Terminal. Hundreds of off-site jobs will be created to support the design, fabrication and construction of these facilities..
  - **Operational Jobs:** The ongoing management and operation of the Brownsville Terminal will create more than 250 new permanent positions.
  - **Indirect Job Creation:** Between 34,000 and 42,000 new American jobs will be indirectly created by the increase in drilling for and production of natural gas required to support the Export Authorization.<sup>24</sup>
- Significant Economic Stimulus:
  - The total economic benefits of the Export Authorization to the American economy are estimated to be between \$7.2 and \$10.4 billion per year from 2018 to 2043, or \$90 to \$130 billion over the requested 25-year export term.<sup>25</sup>
- Material Improvement in the U.S. Balance of Trade:
  - Assuming an average value of \$7 per MMBtu, exporting 2.8 Bcf/d of

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<sup>24</sup> For a discussion of the economic multiplier effect created by investment in natural gas production, see Baumann, Robert H., D.E. Dismukes, D.V. Mesyanzhinov, and A.G. Pulsipher, *Analysis of the Economic Impact Associated with Oil and Gas Activities on State Leases*, LOUISIANA STATE UNIVERSITY CENTER FOR ENERGY STUDIES (2002); Snead, Mark C., *The Economic Impact of Oil and Gas Production and Drilling on the Oklahoma Economy*, OKLAHOMA STATE UNIVERSITY (2002); Considine, Timothy J., *The Economic Impacts of the Marcellus Shale: Implications for New York, Pennsylvania and West Virginia*, A REPORT TO THE AMERICAN PETROLEUM INSTITUTE (2010).

<sup>25</sup> *Id.*

LNG will improve the United States balance of payments by approximately \$7.3 billion per year, or \$183 billion over the requested 25-year export term.

- Significant Environmental Benefits:
  - As the cleanest-burning fossil fuel, natural gas significantly reduces total greenhouse gas emissions when used as a substitute for coal or fuel oil.
  - If the projected 2.8 Bcf/d of LNG is exported to countries that use it as a substitute for coal and fuel oil, it will significantly reduce global greenhouse emissions over the requested 25-year export term.
- Supports American Energy Security:
  - The United States has developed a massive natural gas resource base that is sufficient to supply domestic demand for a century, even with significant exports of LNG. The Export Authorization will not adversely affect U.S. energy security.
  - According to *Shale Gas and U.S. National Security*, a report published in 2011 by the James A. Baker III Institute for Public Policy at Rice University (the “Baker Institute Report”), “full development of commercial shale gas resources in the United States will have multiple beneficial effects for U.S. energy security and national interests.”<sup>26</sup>
  - According to *The Future of Natural Gas*, a report published in 2011 by the Massachusetts Institute of Technology’s Energy Initiative (the “MIT Report”), “[t]he U.S. should sustain North American energy market integration and support development of a global “liquid” natural gas market with diversity of supply. A corollary is that the U.S. should not erect barriers to gas imports or exports.”<sup>27</sup>

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<sup>26</sup> KENNETH B. MEDLOCK III, AMY MEYERS JAFFE, & PETER R. HARTLEY, *SHALE GAS AND U.S. NATIONAL SECURITY* 54 (James A. Baker III Institute for Public Policy, July 2011) (hereinafter, the “Baker Institute Report”), available at <http://bakerinstitute.org/publications/EF-pub-DOEShaleGas-07192011.pdf>.

<sup>27</sup> *Id.*, at 157.

1. The Export Authorization Will Have a Minimal Impact on Natural Gas Prices

Deloitte Marketpoint LLC recently published an independent assessment of the potential economic impacts of LNG exports from the United States (the “Deloitte Report”).<sup>28</sup> Based on its assumption that 6 Bcf/d of LNG exports would be realized from the three Gulf Coast terminals that have applied to DOE/FE for authorization to export LNG, the Deloitte Report concludes that “the magnitude of domestic price increase that results from export of natural gas in the form of LNG is likely quite small.”<sup>29</sup> As pointed out in the Deloitte Report, the North American natural gas market is highly integrated and all segments will work together to mitigate price impacts of demand changes from LNG exports like the Export Authorization.<sup>30</sup>

The United States has sufficient natural gas resources available to meet projected domestic needs, as well as supply natural gas for the Export Authorization, without materially increasing prices over the entire 25-year period for which Gulf Coast has requested authorization. LNG exports under Gulf Coast’s requested Export Authorization are expected to begin in 2018, when total domestic demand for LNG is projected to be 26 Tcf/year.<sup>31</sup> The requested Export Authorization of 1.02 Tcf/year represents only a 3.9% increase in the projected 26 Tcf demand in 2018 when exports are anticipated to commence. The results of the analysis in the Deloitte Report demonstrate that the magnitude of LNG exports, while substantial on their own, are not very significant relative to the entire U.S. resource base or total U.S. demand.

DOE/FE has recently determined that granting authorization to export LNG is not

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<sup>28</sup> DELOITTE CENTER FOR ENERGY SOLUTIONS AND DELOITTE MARKETPOINT LLC, MADE IN AMERICA: THE ECONOMIC IMPACT OF LNG EXPORTS FROM THE UNITED STATES (2011), *available at* [http://www.deloitte.com/assets/Dcom-UnitedStates/Local%20Assets/Documents/Energy\\_us\\_er/us\\_er\\_MadeinAmerica\\_LNGPaper\\_122011.pdf](http://www.deloitte.com/assets/Dcom-UnitedStates/Local%20Assets/Documents/Energy_us_er/us_er_MadeinAmerica_LNGPaper_122011.pdf)

<sup>29</sup> *Id.* at 1.

<sup>30</sup> *Id.* at 10.

<sup>31</sup> EIA ANNUAL ENERGY OUTLOOK 2011, *supra* note 20 at 115, Table A1.



inconsistent with the public interest.<sup>32</sup> Gulf Coast is aware that DOE/FE is in the process of evaluating various matters related to long term LNG exports and, in that regard, has commissioned two studies related to domestic natural gas reserves and production. Gulf Coast is confident that the results of those studies will further substantiate the projections cited herein and affirm that the Export Authorization sought by Gulf Coast is in the public interest and should be approved.

In recent years, the domestic natural gas market has been characterized by increased production and relatively flat demand.<sup>33</sup> Total domestic dry production increased by 2.3 Tcf between 2007 and 2010, while total domestic consumption increased only 1.0 Tcf during the same period. Coupled with the dramatic increase in economically recoverable supplies, the domestic price of natural gas has decreased significantly. The average annual Henry Hub spot price for natural gas has dropped from \$8.24 per MMBtu in February 2007 to \$3.34 in November 2011.<sup>34</sup> As of December 15, 2011, the NYMEX futures “strip” over the next 156 months (i.e., through December 2024) reflect Henry Hub prices settling between \$3.13 and \$7.43.<sup>35</sup> The EIA’s most recently calculated reference case projects that the annual average Lower 48 wellhead price for natural gas will remain under \$5.00 per MMBtu through at least 2018, rising

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<sup>32</sup> *Sabine Pass Liquefaction, LLC*, FE Docket 10-111-LNG, Order No. 2961 (May 20, 2011).

<sup>33</sup> EIA, NATURAL GAS SUMMARY, (Nov. 29, 2011) *available at* [http://www.eia.doe.gov/dnav/ng/ng\\_sum\\_lsum\\_dcu\\_nus\\_a.htm](http://www.eia.doe.gov/dnav/ng/ng_sum_lsum_dcu_nus_a.htm). Specifically, from 2007 to 2010, domestic dry natural gas production increased from 19.3 Tcf to 21.6 Tcf, domestic consumption increased from 23.1 Tcf to 24.1 Tcf, imported LNG decreased from 771 Bcf to 431 Bcf, and net imports of all natural gas decreased from 3.8 Tcf to 2.6 Tcf.

<sup>34</sup> EIA, SHORT-TERM ENERGY OUTLOOK (December 6, 2011) *available at* <http://www.eia.gov/forecasts/steo/report/natgas.cfm>

<sup>35</sup> CME Group, Henry Hub Natural Gas Futures (Trade Date Dec. 15, 2011), *available at* [http://www.cmegroup.com/trading/energy/natural-gas/natural-gas\\_quotes\\_settlements\\_futures.html](http://www.cmegroup.com/trading/energy/natural-gas/natural-gas_quotes_settlements_futures.html)

to only \$9.99 by 2035.<sup>36</sup>

The U.S. natural gas market is liquid and dynamic. Unlike short-term markets, in which supply and demand are largely fixed, both supply and demand in the U.S. natural gas market are elastic.<sup>37</sup> Over the long term, market participants can adapt to known or announced changes in demand by changing incremental production to meet it. Demand created by the Export Authorization will be fully anticipated by the market, because construction of the Brownsville Terminal will be a multi-year process. In light of the long lead time required to build export facilities, and given the public application process for the Export Authorization, there is plenty of time for natural gas producers to increase production, for infrastructure players to build interstate transmission lines, and for consumers to modify their behavior in response to price changes.<sup>38</sup> There will be ample notice and time in advance of the exports to make supplies available.<sup>39</sup> Ultimately, any price impact will be determined by the marginal cost of the supply required to meet the additional demand created by the Export Authorization.

The projected price impact of the incremental demand created by the Export Authorization is small. The Deloitte Report, which assumed 6 Bcf/d of LNG exports, projects a weighted average price impact of \$0.12 per MMBtu on U.S. prices from 2016 to 2035, representing a 1.7% increase in the projected average U.S. citygate gas price of \$7.09MMBtu over that time period.<sup>40</sup> Due to their proximity to the prospective export terminals in the U.S. Gulf Coast, the projected increases in Henry Hub and Houston Ship Channel gas prices are

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<sup>36</sup> EIA ANNUAL ENERGY OUTLOOK 2011, *supra* note 20, at Table 13.

<sup>37</sup> DELOITTE REPORT, *supra* note 28, at 8.

<sup>38</sup> *Id.* at 2.

<sup>39</sup> *Id.* at 8.

<sup>40</sup> *Id.*

\$0.22/MMBtu and \$0.20/MMBtu, respectively, during this period.<sup>41</sup> The projected impacts at downstream markets, such as Illinois, New York and California, are generally only \$0.10/MMBtu or less.<sup>42</sup> Even taking into account an additional 2.8 Bcf/d Export Authorization, the price effect would remain insignificant. To put these price impacts in perspective, consider that between 2007 and 2010, the spot market price for one MMBtu of natural gas moved by a daily average of \$0.16 at the Henry Hub, Houston Ship Channel, and Katy Hub.<sup>43</sup>

The price impact of the Export Authorization is so small because the United States' total domestic natural gas reserves are very large and the interstate natural gas pipeline system is highly effective in supporting market liquidity. Total U.S. recoverable reserves are currently estimated to be sufficient to meet domestic demand for the next 100 years.

## 2. Domestic Natural Gas Supplies and Resource Base

The growth in domestic natural gas production has been made possible by technical advances in horizontal drilling and hydraulic fracturing that allow economical recovery of previously inaccessible reserves. These advances have also prompted a reevaluation of shale-gas plays in the Appalachian basin, the Mid-Continent, the Gulf Coast and Rocky Mountain areas — plays that some believe may make the United States “the Saudi Arabia of natural gas.”<sup>44</sup> Despite the relative maturity of the United States gas supply, estimates of remaining reserves have continued to grow over time, and have accelerated in recent years.

According to the Annual Energy Outlook 2011, prepared by the U.S. Energy Information

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<sup>41</sup> *Id.*

<sup>42</sup> *Id.*

<sup>43</sup> PLATTS GAS DAILY, DAILY PRICE SURVEY (2007 - 2010). The largest single-day spot market price change was \$1.15 at the Henry Hub, \$1.38 at the Houston Ship Channel, and \$1.39 at the Katy Hub.

<sup>44</sup> Joe Kamalick, *Shale Gas can Meet U.S. Needs for 100 Years – Study*, ICIS News (July 30, 2008) available at <http://www.icis.com/Articles/2008/07/30/9144315/shale-gas-can-meet-us-needs-for-100-years-study.html>.

Administration (“EIA”), the United States has 2,543 Tcf of total domestic recoverable natural gas reserves. This is more than 105 years of total domestic supply at 2010’s rate of consumption of 24.1 Tcf, and more than 95 years of supply at the EIA’s 2035 projected rate of consumption of 26.6 Tcf.<sup>45</sup> Even after assuming total exports of 10 Bcf/d in addition to the EIA’s projection of 2035 consumption, the resulting total demand of 30.3 Tcf per year would take 84 years to consume.

According to the MIT Report, estimates of remaining recoverable gas resources in the U.S. currently range between 1,500 and almost 2,850 Tcf.<sup>46</sup> IHS CERA Inc. has reported that “North American discovered natural gas resources have increased by more than 1,800 Tcf over the past three years, bringing the total natural gas resource base to more than 3,000 Tcf, a level that could supply current consumption for well over 100 years.”<sup>47</sup> The Potential Gas Committee’s most recent biennial assessment of the nation’s natural gas resources concluded that the United States possesses a total resource base of 2,170 Tcf.<sup>48</sup> This was the highest resource valuation in the Committee’s 46-year history. Of the seven geographic areas analyzed in the Committee report, “the Gulf Coast, including the Gulf of Mexico continental shelf, slope and deepwater, remains the country’s richest resource area.”<sup>49</sup> Most of the increase in recoverable resources has come from shale gas in the Barnett, Haynesville, South Texas (Eagle Ford), and

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<sup>45</sup> EIA ANNUAL ENERGY OUTLOOK 2011, *supra* note 20, at 79, at 99, Table 16; EIA, ANNUAL U.S. NATURAL GAS TOTAL CONSUMPTION, (Nov. 29, 2010) *available at* <http://www.eia.doe.gov/dnav/ng/hist/n9140us2a.htm>.

<sup>46</sup> MIT REPORT, *supra* note 13, at 30 (2011).

<sup>47</sup> IHS CERA, FUELING NORTH AMERICA’S ENERGY FUTURE (2010), *available at* <http://www.anga.us/media/41065/ihs%20cera%20fueling%20the%20future.pdf>

<sup>48</sup> *Potential Gas Committee Reports Substantial Increase In Magnitude of U.S. Natural Gas Resource Base*, Colorado School of Mines Press Release (April 17, 2011).

<sup>49</sup> *Id.*

Marcellus basins.<sup>50</sup>

The United States produces substantial quantities of natural gas from multiple sources. Production from unconventional natural gas resources, specifically shale gas, has increased to 3.1 Tcf in 2009 from 1.3 Tcf in 2007.<sup>51</sup> The EIA forecasts shale gas production to increase to 7.2 Tcf by 2015 and 12.25 Tcf by 2035, representing a fourfold increase from 2009 to 2035.<sup>52</sup> Domestic gas production is projected to increase to approximately 27 Tcf in 2035, an average annual growth rate of 0.9%.<sup>53</sup> Numerous other public and private forecasts of U.S. natural gas production project similar increases. The MIT Report forecasts that total domestic gas production may grow by up to 45% through 2050, with shale gas expected to provide the biggest increase in production.<sup>54</sup>

When the technology of horizontal drilling and hydraulic fracturing was brought to bear in the Barnett Shale in 2005, annual domestic natural gas production was 18.9 Tcf.<sup>55</sup> In 2010, total domestic natural gas production was 22.6 Tcf, the second highest annual production in U.S. history, trailing the highest production year on record (1973) by only 0.7 Tcf.<sup>56</sup> The Barnett shale field in Texas has produced more than 8 Tcf, and continues to produce more than 5 Bcf/d.<sup>57</sup>

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<sup>50</sup> New York Times, *Potential U.S. Natural Gas supplies Have Jumped 3%, Industry Experts Say* (April 27, 2011) available at <http://www.nytimes.com/gwire/2011/04/27/27greenwire-potential-us-natural-gas-supplies-have-jumped-37399.html>.

<sup>51</sup> EIA, SHALE GAS PRODUCTION, available at [http://www.eia.doe.gov/dnav/ng/ng\\_prod\\_shalegas\\_s1\\_a.htm](http://www.eia.doe.gov/dnav/ng/ng_prod_shalegas_s1_a.htm).

<sup>52</sup> EIA ANNUAL ENERGY OUTLOOK 2011, *supra* note 20, at 143, Table A14 (2011).

<sup>53</sup> EIA ANNUAL ENERGY OUTLOOK 2011, *supra* note 20, at 115, Table A1 (2011).

<sup>54</sup> MIT REPORT, *supra* note 13, at 56 (2011).

<sup>55</sup> EIA, ANNUAL U.S. NATURAL GAS MARKETED PRODUCTION (Nov. 29, 2011) available at <http://www.eia.gov/dnav/ng/hist/n9050us2a.htm>.

<sup>56</sup> *Id.*

<sup>57</sup> Star-Telegram, *Barnett Shale natural gas field passes a milestone* (Nov. 1, 2010) available at <http://www.star-telegram.com/2010/11/01/2595223/barnett-shale-natural-gas-field.html>; see also Star-Telegram, *Has the Barnett*

Production at the top five U.S. shale plays—Marcellus, Haynesville, Woodford, Fayetteville, and Barnett—is expected to grow rapidly over the next decade.<sup>58</sup> The Eagle Ford shale, discovered in 2008, contains an estimated 20.8 Tcf of technically recoverable gas and is an active developing play.<sup>59</sup>

Because the domestic natural gas market is large, well-integrated, and liquid, economic dispatch pressure will raise production in other states to meet demand that otherwise would have been satisfied by flows out of Texas.<sup>60</sup> For example, a reduction of natural gas flows from Texas to the Midwest will prompt increased production out of the Midcontinent basin. In fact, according to the Deloitte Report, production increases in Northeastern U.S. gas markets will result in displacement of flows out of the Gulf Coast region.<sup>61</sup> Combined with the growing shale gas production out of Haynesville and Eagle Ford, Texas and the Gulf Coast region is projected to continue to have plentiful production and remain one of the lowest cost regions in North America.<sup>62</sup> Texas is well positioned to absorb the increased demand from the Export Authorization without materially affecting the gas supply available within Texas, the Gulf Coast region, or elsewhere in the United States.

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*Shale left its best days behind?* (Nov. 12, 2011) available at <http://www.star-telegram.com/2011/11/12/3519847/has-the-barnett-shale-left-its.html>.

<sup>58</sup> See Don Warlick, *A Current View of the Top 5 U.S. Gas Shales*, OIL & GAS FINANCIAL JOURNAL (Feb. 1, 2010) available at [http://www.ogfj.com/articles/print/volume-7/issue-2/features/a-current\\_view\\_of.html](http://www.ogfj.com/articles/print/volume-7/issue-2/features/a-current_view_of.html)

<sup>59</sup> EIA, REVIEW OF EMERGING RESOURCES: U.S. SHALE GAS AND SHALE OIL PLAYS 29-30 (July 2011) available at <ftp://ftp.eia.doe.gov/natgas/usshaleplays.pdf>.

<sup>60</sup> Economic dispatch describes the method of operating gas production and pipeline facilities to optimize efficient, low-cost production of natural gas to reliably serve demand, while taking into account the operational limits of production and pipeline facilities.

<sup>61</sup> DELOITTE REPORT, *supra* note 28, at 6 (“The expected result is displacement of volumes from the Gulf which would depress prices in the Gulf region.”)

<sup>62</sup> *Id.*

### 3. Domestic Natural Gas Demand

The nature of the natural gas market has changed dramatically in recent years. A decade ago, conventional wisdom held that the United States' per capita energy consumption would continue to rise, and that domestic gas supplies were in decline and inadequate to meet near-term future demand. FERC and the DOE/FE processed a flood of LNG import authorization requests for projects designed to meet a perceived need for foreign LNG supplies. However, experience has proven those assumptions obsolete. The EIA's most recently calculated reference case projects that the energy intensity of the U.S. economy, measured as primary energy use (in Btu) per dollar of GDP (in 2005 dollars), declines 1.9% year over year between 2009 and 2035.<sup>63</sup>

The continued growth of energy-efficiency measures has effectively dampened the per-person demand curve for energy and reduced the pressure on natural gas demand. Utility regulatory commissions across the country have succeeded with various programs encouraging consumers to adopt energy-efficiency measures. Some states, such as California, have achieved a near-flat per capita energy demand during the last decade. The federal government, which is the largest consumer of energy in the United States, has also begun to aggressively reduce its own energy consumption by employing energy efficiency measures and encouraging the development of alternative energy resources.

The United States consumed 24.1 Tcf of natural gas in 2010, but the EIA projects this number will rise to only 26.6 Tcf in 2035.<sup>64</sup> Assuming that the United States has 2,543 Tcf of

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<sup>63</sup> EIA, ANNUAL ENERGY OUTLOOK 2011 62 (2011), *available at* <http://www.eia.gov/forecasts/aeo/pdf/0383%282011%29.pdf>.

<sup>64</sup> EIA, ANNUAL U.S. NATURAL GAS TOTAL CONSUMPTION, (Nov. 29, 2010) *available at* <http://www.eia.doe.gov/dnav/ng/hist/n9140us2a.htm>; EIA ANNUAL ENERGY OUTLOOK 2011, *supra* note 20 at 99, Table 16 (2011).

recoverable reserves as projected by the EIA,<sup>65</sup> its supply is sufficient to meet all domestic demand at current rates for over 100 years. The Export Authorization is projected to require about 25.55 Tcf of natural gas over its 25-year term, which represents just 1% of the EIA's total estimated U.S. recoverable reserves — estimates of which have been consistently growing over the last five years.<sup>66</sup>

Considering the size of natural gas resources discovered in the U.S. and the determination to develop large scale renewable energy sources, the natural gas produced and exported under the Export Authorization will not be needed for decades, if ever. For example, methane hydrates, though still at an early stage of development as an energy resource, may represent a significant long-term resource option. According to the MIT Report, while methane hydrates are unlikely to reach commercial viability for global markets for at least 15 to 20 years, an estimated 100,000 Tcf may be technically recoverable from high-saturation gas hydrate deposits.”<sup>67</sup>

The growth of alternative energy has also reduced the demand for fossil-fuel-generated power. Across the country, utility commissions have promoted renewable energy projects by adopting renewable-energy portfolio standards.<sup>68</sup> These vary from state to state, but the trend is significant and appears to be increasing. California, for example, requires 33% of electricity sold in the state to come from renewable energy sources by 2020.<sup>69</sup> There is even discussion at the federal level for establishing a national minimum alternative-energy requirement.

Technology has also steadily improved. Wind turbines are remarkably more efficient and

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<sup>65</sup> EIA, ANNUAL ENERGY OUTLOOK 2011 REFERENCE CASE, *supra* note 20, at 22 (2011).

<sup>66</sup> *Id.*

<sup>67</sup> MIT REPORT, *supra* note 13, at 45, 47 (2011).

<sup>68</sup> See, e.g., EIA ANNUAL ENERGY OUTLOOK 2011, *supra* note 20, at 8-9 (2011) available at <http://www.eia.gov/forecasts/aeo/pdf/0383%282011%29.pdf>.

<sup>69</sup> See CAL. PUB. UTILITIES COMM., *CPUC Applauds 33 Percent Renewable Energy Bill Signing*, available at [http://docs.cpuc.ca.gov/PUBLISHED/NEWS\\_RELEASE/133440.htm](http://docs.cpuc.ca.gov/PUBLISHED/NEWS_RELEASE/133440.htm).



more environmentally friendly than a decade ago. The United States is now beginning to harvest its offshore wind resources, as evidenced by the recent FERC approval of a major offshore wind project on the East Coast. Solar photovoltaic cells have more than doubled in efficiency in the last couple of years and continue to improve. Concentrated solar techniques are also now being employed on a utility scale. Some states are implementing feed-in tariffs to further encourage alternative energy development. Stimulus programs administered by DOE and Treasury pursuant to the American Recovery and Reinvestment Act have provided billions of dollars for the development of alternative energy technology, complementing private investment.<sup>70</sup> This enormous influx of capital for alternative energy development will further increase the near-term and long-term contributions of alternative energy and equivalently further reduce future U.S. demand for fossil fuel supplies, including natural gas.

Although these measures are desirable, it is also true that they exert downward pressure on the demand curve for natural gas. Downward pressure on demand is not conducive to the development of natural gas supplies, resulting in idle rigs, shut-ins of productive wells, and deployment of capital to other ends.

In conjunction with renewable energy resources such as wind and solar, alternative energy sources are likely to replace the natural gas reserves used to meet demand created by Export Authorization. As a result, it is reasonable to expect that the 25.55 Tcf of gas required to supply the Export Authorization over the next 25 years will never be needed in the United States and may never be otherwise produced. The economic benefits to the United States derived from the Export Authorization may not be a question of “now or later,” but rather “now or never.”

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<sup>70</sup> A complete list of funding made available under the American Recovery and Reinvestment Act of 2009, Pub. L. No. 111-5 (2009) may be found at <http://energy.gov/downloads/recovery-act-recipient-data>.

4. Benefits to Local, Regional and National Economy

The Export Authorization allows the United States to realize the economic benefits of natural gas resources that would not otherwise be realized for decades to come, if ever. The Export Authorization will stimulate the local, regional, and national economies by creating jobs, growing the tax base, and increasing overall economic activity. The economic impact of the Export Authorization may phase in as the market develops for total potential LNG production.

It is estimated that the Export Authorization will result in the creation of between 34,000 and 42,000 new jobs and provide a total incremental economic benefit of between \$7.2 and \$10.4 billion per year.<sup>71</sup>

The design, engineering, and construction of the Brownsville Terminal will provide an immediate boost to the local and regional economies. Between 2012 and 2014, Gulf Coast estimates that over \$100 million will be spent on professional services such as engineering and legal consultants. After construction begins, which is projected to occur in 2014, total direct expenditures will exceed \$12 billion, directly creating over 3,000 on-site design and construction jobs. Hundreds of additional off-site U.S. jobs will be created indirectly by the need to support the design, fabrication and construction of the Brownsville Terminal. The liquefaction facilities are expected to be phased into operation from 2018 to 2020, which will require Gulf Coast to hire a permanent staff of over 250 employees.

Gulf Coast's staffing will be dwarfed by the total number of new jobs created by the increased production of natural gas required for the Export Authorization. Producing the 2.8 Bcf/d of natural gas required for the Export Authorization will require direct expenditures of

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<sup>71</sup> See discussion of the economic multiplier effect created by investment in natural gas production at note 24, *supra*.

approximately \$5.4 billion per year for exploration, drilling, and production.<sup>72</sup> Assuming that 6.2 to 7.7 jobs are created for every \$1 million spent, the Export Authorization is expected to generate between 34,000 and 42,000 jobs.<sup>73</sup>

Job creation will start several years before the initial production of the Export Authorization volumes in 2018, and it is reasonable to expect significant economic benefits to be realized as soon as 2014. The economic development spurred by the Export Authorization will provide substantial tax revenue to state and local governments, not only from taxes on natural gas itself but also increased economic activity related to exploration, production, and infrastructure construction. Such increased economic activity can be expected to spill over into other areas of the economy, resulting in employment and income impacts on business such as restaurants, retailers, hotels, and other service-providers, as well as providing additional resources for community services, such as health care, education, and charities.<sup>74</sup>

Various studies of the economic impacts of producing natural gas suggest that investment associated with the Export Authorization may enjoy multiplier effect ranging from 1.34 to 1.90.<sup>75</sup> In other words, for every dollar of direct natural gas expenditure, one can reasonably expect between \$1.34 and \$1.90 of gross economic benefit. Applying these multipliers to the estimated \$5.4 billion of annual direct expenditures required to produce the source gas, the Export

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<sup>72</sup> Thomas Choi, Dale Nesbitt, and Brad Barnds, *Analysis of Freeport LNG Export Impact on U.S. Markets*, ALTOS MANAGEMENT PARTNERS Inc. 6, 15 (2010) available at [http://www.fossil.energy.gov/programs/gasregulation/authorizations/2010\\_applications/10\\_160\\_LNGfta.pdf](http://www.fossil.energy.gov/programs/gasregulation/authorizations/2010_applications/10_160_LNGfta.pdf)

<sup>73</sup> See note 24, *supra* (discussion of the economic multiplier effect created by investment in natural gas production).

<sup>74</sup> See, e.g., Timothy Considine, Ph.D., M.B.A., Roben Watson, Ph.D., P.E., Rebecca Entler & Jeffrey Sparks, *An Emerging Giant: Prospects and Economic Impacts of Developing the Marcellus Shale Natural Gas Play*, THE PENN. STATE UNIV. DEPT OF ENERGY & MINERAL ENG'G 18, 23 (2009), available at <http://www.alleghenyconference.org/PDFs/PELMisc/PSUStudyMarcellusShale072409.pdf>.

<sup>75</sup> See note 24, *supra* (discussion of the economic multiplier effect created by investment in natural gas production).

Authorization is expected to generate an annual economic benefit of between \$7.2 and \$10.4 billion. By creating new demand for incremental production of natural gas, the Export Authorization will play an essential role in spurring investment and technological development throughout the exploration and production supply chain. The indirect benefits associated with the Export Authorization include high-wage jobs created by the natural gas industry, royalty and lease payments paid to landowners, an expansion of the United States' natural gas production infrastructure, and substantial additional revenue to the federal and state treasuries via increased tax revenue. This multiplier effect will create improvements across the entire domestic economy.

The economic multiplier effect is borne out in numerous studies analyzing the economic benefits of shale gas development. A study analyzing the economic impact of the Eagle Ford shale by The University of Texas at San Antonio found that since 2008, when the Eagle Ford was first discovered, Eagle Ford shale activity has accounted for roughly 6% of the gross regional product for the play's 24-county area.<sup>76</sup> The UTSA Study determined that in 2009, the Eagle Ford supported 12,601 jobs and added \$2.9 billion in total economic output.<sup>77</sup> To put the rapid growth of this shale gas play in perspective, only 19 Bcf of natural gas was produced in the Eagle Ford in 2009. Since then, natural gas production in the Eagle Ford has continued to rise, amounting to 108 Bcf in 2010 and 139 Bcf between January and August 2011. Through October 2011, 3,477 drilling permits were issued in the Eagle Ford, an increase of 3,357 since 2009.<sup>78</sup>

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<sup>76</sup> Economic Impact of the Eagle Ford Shale, UTSA Center for Community and Business Research, at 4 ("UTSA Study"), available at <http://ccbr.iedtexas.org/index.php/Our-Projects/economic-impact-of-the-eagle-ford-shale.html>.

<sup>77</sup> *Id.* at 10.

<sup>78</sup> Railroad Commission of Texas, Eagle Ford Information (Dec. 7, 2011) available at [http://www.rrc.state.tx.us/eagleford/eagleford\\_dp\\_issued.pdf](http://www.rrc.state.tx.us/eagleford/eagleford_dp_issued.pdf); <http://www.rrc.state.tx.us/eagleford/eaglefordproduction.pdf>

A Pennsylvania State University study analyzing the economic impact of the Marcellus shale gas industry in Pennsylvania estimated that the Marcellus gas industry provided a direct economic stimulus of \$2.18 billion dollars to the local economy and a total economic benefit of more than \$4.2 billion.<sup>79</sup> Other natural gas studies have used economic multipliers as high as 1.94.<sup>80</sup> A National Energy Technology Laboratory study analyzing the economic impact of Marcellus shale gas development found that in 2009, Marcellus shale gas drilling activity in West Virginia contributed almost 5,000 jobs and \$989 million in gross economic output.<sup>81</sup> A study analyzing the economic impact of Barnett shale found that the total effects of Barnett shale activity included \$11.0 billion in annual output and 111,131 jobs.<sup>82</sup> The Export Authorization can be expected to have a significant economic impact, yielding numerous benefits for local and regional economies, as well as the U.S. economy at large.

#### 5. Balance of Trade

The Export Authorization, once approved, will increase LNG exports by \$7.3 billion per year, equivalent to 2.8% of the 2010 U.S. trade deficit for petroleum goods — a significant beneficial impact on the United States' overall balance of trade.<sup>83</sup>

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<sup>79</sup> Considine et al., *supra* note 74, at 23.

<sup>80</sup> *Id.*

<sup>81</sup> National Energy Technology Laboratory, *Projecting the Economic Impact of Marcellus Shale Gas Development in West Virginia* at vi (2010), available at <http://www.netl.doe.gov/energy-analyses/pubs/WVMarcellusEconomics3.pdf>.

<sup>82</sup> See The Perryman Group, *An Enduring Resource: A Perspective on the Past, Present and Future Contribution of the Barnett Shale to the Economy of Fort Worth and the Surrounding Area* at 32 (2009), available at [http://groundwork.iogcc.org/sites/default/files/2009\\_eco\\_report.pdf](http://groundwork.iogcc.org/sites/default/files/2009_eco_report.pdf).

<sup>83</sup> Assumes export of 2.8 Bcf/d LNG valued at \$7.00 per Mcf. In 2010, the petroleum products trade deficit was \$265 billion. BUREAU OF ECONOMIC ANALYSIS, U.S. DEPARTMENT OF COMMERCE, U.S. International Trade in Goods and Services Annual Revision for 2010, at Exhibit 8, available at <http://www.bea.gov/newsreleases/international/trade/2011/pdf/trad1311.pdf>

Increasing exports to address the United States' trade imbalance is a critical element of the U.S. Government's concerted effort to speed up the economic recovery, and granting Gulf Coast's application to export LNG is consistent with this goal. On March 11, 2010, the President created the National Export Initiative (the "NEI") by Executive Order.<sup>84</sup> The purpose of the NEI is to "enhance and coordinate Federal efforts to facilitate the creation of jobs in the United States through the promotion of exports."<sup>85</sup> Underpinning this policy is the fact that "[a] critical component of stimulating economic growth in the United States is ensuring that U.S. businesses can actively participate in international markets by increasing their exports."<sup>86</sup> Exports, the NEI explains, "create good high-paying jobs."<sup>87</sup>

The Export Authorization will meaningfully impact the trade imbalance for the petroleum products sector—an area where trade is heavily skewed towards imports. According to the U.S. Department of Commerce, the total U.S. trade deficit was \$500 billion in 2010.<sup>88</sup> Although the United States exported a total of \$1.84 trillion in goods and services last year, it imported over \$2.34 trillion during that same period.<sup>89</sup> The United States imported over \$336 billion in petroleum products in 2009, but exported a mere \$71 billion, resulting in a net trade deficit of \$265 billion for petroleum products alone.<sup>90</sup> Put simply, over half of America's total trade deficit is attributable to the nation's negative balance of trade in petroleum products alone.

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<sup>84</sup> National Export Initiative, Exec. Order 13,534, 75 C.F.R. 12433 (March 16, 2010); *available at* <http://edocket.access.gpo.gov/2010/pdf/2010-5837.pdf>.

<sup>85</sup> *Id.*

<sup>86</sup> *Id.*

<sup>87</sup> *Id.*

<sup>88</sup> BUREAU OF ECONOMIC ANALYSIS, U.S. DEPARTMENT OF COMMERCE, *U.S. International Trade in Goods and Services* 1 (2010); *available at* <http://www.bea.gov/newsreleases/international/trade/2011/pdf/trad1311.pdf>.

<sup>89</sup> *Id.*

<sup>90</sup> *Id.* at Exhibit 8.

The Export Authorization would materially advance the federal government's objective of promoting U.S. exports. In the U.S. Government's first progress report on the NEI, issued July 7, 2010, a 17% increase in exports was reported for the first four months of 2010 as compared to the same period from the previous year.<sup>91</sup> The first NEI Progress Report identified specific accomplishments, such as trade agreements designed to add \$1 billion to pork and poultry exports, deemed to have a significant impact on the trade balance.<sup>92</sup> While significant, this represents a mere 13% of the export growth that would result from the Export Authorization. Against this backdrop, approval of the Export Authorization will be one of the most significant export and export-related job creation catalysts.

As demonstrated by the NEI and other public positions taken by the U.S. Government, it is the policy of the federal government to reduce barriers to trade and to better balance trade and capital flows.<sup>93</sup> Accordingly, in a prior Order authorizing FLNG Development to re-export imported LNG, DOE/FE expressly found that such exports would result in "mitigation of balance of payment issues to the benefit of the United States interests."<sup>94</sup>

## 6. Global Environmental Benefits

Because it is the cleanest-burning fossil fuel, natural gas offers a number of environmental benefits compared to oil and coal. The combustion of natural gas results in less

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<sup>91</sup> *President Obama Provides Progress Report on National Export Initiative, Announces Members of the President's Export Council*, White House Press Release (July 7, 2010); available at <http://www.whitehouse.gov/the-press-office/president-obama-provides-progress-report-national-export-initiative-announces-membe>.

<sup>92</sup> *Progress Report on the National Export Initiative*, July 7, 2010; available at [http://www.whitehouse.gov/sites/default/files/exports\\_progress\\_report.pdf](http://www.whitehouse.gov/sites/default/files/exports_progress_report.pdf).

<sup>93</sup> See Howard Schneider and Scott Wilson, *The "G-2." U.S. and China, Will be the Center of the G-20 Debates in Seoul*, THE WASHINGTON POST (Nov. 10, 2010).

<sup>94</sup> *Freeport LNG Development, L.P.*, FE Docket No. 08-70-LNG, Order No. 2644 at 12.

pollution than the combustion of other fuels.<sup>95</sup> Compared to the average air emissions from coal-fired generation, power plants that burn natural gas produce half as much carbon dioxide, less than a third of the nitrogen oxides, and one percent of the sulfur oxides.<sup>96</sup> Natural gas is not a significant contributor to either acid rain or smog formation, unlike petroleum products and coal.<sup>97</sup>

Not only is natural gas a cleaner fuel, but as the U.S. Energy Information Administration has noted, new natural-gas-fired plants are much cheaper to build than new renewable or nuclear plants.<sup>98</sup> As more and more nations look for alternative sources of power generation beyond coal or oil — and move to regulate or tax greenhouse gases — demand for LNG will continue to grow worldwide.<sup>99</sup> Opening new overseas markets for natural gas will require plants that are equipped to liquefy large amounts of the gas in a safe and environmentally friendly manner. The LNG industry has a proven environmental safety record with 40 years of shipping LNG over the Atlantic, Pacific and Indian Oceans with no major incidents involving LNG ships or their cargo.<sup>100</sup> Moreover, “LNG tankers are generally less polluting than other shipping vessels

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<sup>95</sup> EIA, NATURAL GAS 1998: ISSUES AND TRENDS at 50 (1998), *available at* [http://www.eia.doe.gov/oil\\_gas/natural\\_gas/analysis\\_publications/natural\\_gas\\_1998\\_issues\\_and\\_trends/it98.html](http://www.eia.doe.gov/oil_gas/natural_gas/analysis_publications/natural_gas_1998_issues_and_trends/it98.html).

<sup>96</sup> EPA, AIR EMISSIONS, *available at* <http://www.epa.gov/cleanenergy/energy-and-you/affect/air-emissions.html>.

<sup>97</sup> EIA, NATURAL GAS 1998: ISSUES AND TRENDS, at 54 (1998), *available at* [http://www.eia.doe.gov/oil\\_gas/natural\\_gas/analysis\\_publications/natural\\_gas\\_1998\\_issues\\_and\\_trends/it98.html](http://www.eia.doe.gov/oil_gas/natural_gas/analysis_publications/natural_gas_1998_issues_and_trends/it98.html).

<sup>98</sup> EIA, ANNUAL ENERGY OUTLOOK 2011, *supra* note 23, at 40.

<sup>99</sup> *See, e.g.*, IPCC FOURTH ASSESSMENT REPORT: CLIMATE CHANGE 2007: WORKING GROUP III: MITIGATION OF CLIMATE CHANGE § 4.2.3 (“Increased use of natural gas has recently occurred throughout the Asian region ... A liquefied natural gas (LNG) market has recently emerged in the region, dominated by Japan, South Korea and Taiwan ...”), *available at* [http://www.ipcc.ch/publications\\_and\\_data/ar4/wg3/en/contents.html](http://www.ipcc.ch/publications_and_data/ar4/wg3/en/contents.html).

<sup>100</sup> DOE, FOSSIL ENERGY, *LNG Safety & Security*, *available at* <http://www.fossil.energy.gov/programs/oilgas/storage/lng/feature/howSAFEisit.html>; *see also* SANDIA NAT’L LABS., GUIDANCE ON RISK ANALYSIS AND SAFETY IMPLICATIONS OF A LARGE LIQUEFIED NATURAL GAS (LNG) SPILL OVER WATER at 14 (2004) (“Risks from accidental LNG spills, such as from collisions and groundings, are small and



because they burn natural gas in addition to fuel oil for propulsion.”<sup>101</sup> Thus, the Export Authorization will offer significant environmental benefits by supplying cleaner energy to help meet increased global demand.

#### 7. National Security Benefits

The United States has developed massive natural gas reserves that are sufficient to meet all domestic demand for decades, even with significant exports of LNG. As a result, the LNG exports associated with the Export Authorization will not degrade U.S energy security. Further, by promoting a global, liquid, and robust market for natural gas, the United States will increase economic trade and ties with foreign nations by providing them with access to a reliable supply of alternative clean fuel.

The United States is recognized as a stable and reliable trading partner. Its participation in creating a liquid, global market for natural gas would promote the security interests of all nations involved. For example, almost half the natural gas currently imported into the European Union is conveyed via pipeline from Russia and North Africa, and its dependence on long supply chains through politically volatile areas creates significant security concerns for America’s allies.<sup>102</sup>

According to the Baker Institute Report, “full development of commercial shale gas resources in the United States will have multiple beneficial effects for U.S. energy security and national interests.”<sup>103</sup> Full and timely development of U.S. shale gas resources will create

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manageable with current safety policies and practices.”), *available at* [http://www.fossil.energy.gov/programs/oilgas/storage/lng/sandia\\_lng\\_1204.pdf](http://www.fossil.energy.gov/programs/oilgas/storage/lng/sandia_lng_1204.pdf).

<sup>101</sup> Michelle Michot Foss, Ph.D., *Introduction to LNG*, THE UNIVERSITY OF TEXAS AT AUSTIN 23 (2007), *available at* [http://www.beg.utexas.edu/energyecon/lng/documents/CEE\\_INTRODUCTION\\_TO\\_LNG\\_FINAL.pdf](http://www.beg.utexas.edu/energyecon/lng/documents/CEE_INTRODUCTION_TO_LNG_FINAL.pdf).

<sup>102</sup> MIT REPORT, *supra* note 14, at 152 (2011).

<sup>103</sup> BAKER INSTITUTE REPORT, *supra* note 29, at 54.

greater competition among suppliers in global markets, and keep U.S. and international prices for natural gas from rising substantially. Increased competition among world natural gas suppliers “reduces the threat that a Gas-OPEC can be formed”, and “will trim the petro-power of energy production countries such as Russia, Iran, and Venezuela to assert themselves using an “energy” weapon or “energy diplomacy” to counter U.S. interests abroad.”<sup>104</sup> The Baker Institute Report concludes that United States will need to adopt policies that ensure shale gas exploration can proceed steadily and predictably, and that ensure that shale gas can play a significant role in the U.S. and global energy mix, thereby contributing to greater diversification of global energy supplies and to the long-term national interests of the United States.<sup>105</sup> The Export Authorization is directly supportive of those policy objectives.

The MIT Report makes the following conclusions regarding the impact of U.S. exports on domestic and global security interests:

- “...even though the U.S. is not significantly dependent on imports, American security interests can be strongly affected by the energy supply concerns of its allies.”
- “Overall, a global ‘liquid’ natural gas market is beneficial to U.S. and global economic interests and, at the same time, advances security interests through diversity of supply and resilience to disruptions.”
- “U.S. freedom of action in foreign policy is tied to global energy supply.”<sup>106</sup>

Developing a large and flexible export capability will increase the United States’ foreign policy options.

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<sup>104</sup> *Id.*

<sup>105</sup> *Id.*

<sup>106</sup> *Id.* at 155 (2011).

By promoting a global, liquid, and robust market for natural gas, the United States will increase economic trade and ties with foreign nations. Beyond the more general security benefits, the Export Authorization offers a potential security advantage for the United States by selling into the international market with market-based pricing structures that will offset those that may seek to monopolize the natural gas industry.

## VII.

### ENVIRONMENTAL IMPACT

Gulf Coast's intended LNG exports will require the siting, construction and operation of the Brownsville Terminal, subject to environmental review and authorization by FERC.<sup>107</sup> Gulf Coast therefore requests that DOE/FE authorize the requested export of LNG produced from domestically sourced natural gas conditioned upon environmental review and authorization of the Brownsville Terminal by FERC.<sup>108</sup>

## VIII.

### REPORTING REQUIREMENTS

For all exports made pursuant to the authorization requested herein, Gulf Coast will undertake to file reports with the DOE/FE in the month following the close of each calendar quarter indicating by month whether exports have occurred, and if so, the details of each transaction, including the total volumes of exports in Mcf and the average price for exports per

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<sup>107</sup> See, e.g. *Import and Export of Natural Gas*, 46 Fed. Reg. 44,696 at 44,700 (Sep. 4, 1981); *Rochester Gas and Electric Corp.*, FE Docket No. 90-05-NG, Order No. 503 (May 16, 1991). 10 C.F.R. § 590.402 (2010)

<sup>108</sup> 10 C.F.R. § 590.402 (2010) ("The Assistant Secretary may issue a conditional order at any time during a proceeding prior to issuance of a final opinion and order. The conditional order shall include the basis for not issuing a final opinion and order at that time and a statement of findings and conclusions. The findings and conclusions shall be based solely on the official record of the proceeding.")

MMBtu at the international border.<sup>109</sup> The reports shall include the name of the seller, the name of the purchaser, the estimated or actual duration of the agreements, the name of the U.S. transporter(s), the point of exit, whether the sales are made on an interruptible or firm basis, and, if applicable, the per unit (MMBtu) demand/commodity/reservation charge breakdown of the contract price. Gulf Coast will notify the DOE/FE in writing of the date of the first delivery of natural gas exported under the requested authorization within two weeks of such delivery.

## IX.

### APPENDICES

- Appendix A: Opinion of Counsel.  
Appendix B: Verification and Certification

## X.

### CONCLUSION

Gulf Coast requests long-term, multi-contract authorization to export up to 2.8 Bcf/d, or 1022 Bcf/y of LNG, up to a total of 25.55 Tcf over the requested 25-year term, which is requested to commence on the date of first export or 8 years from the date of issuance of the authorization requested by this application, whichever is sooner. Should DOE/FE conclude that only a portion of Gulf Coast's requested authorization quantity or term is in the public interest, Gulf Coast requests authorization for that alternative quantity or term. Gulf Coast seeks to export LNG to any country which has or in the future develops the capacity to import LNG via ocean-going carrier, and with which trade is not prohibited by U.S. law or policy. Gulf Coast requests authorization to export LNG on its own behalf or as agent for others, and Gulf Coast

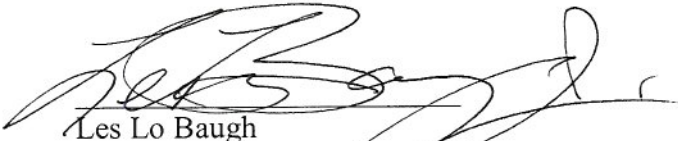
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<sup>109</sup> See Procedural Order Eliminating Quarterly Reporting Requirement and Amending Monthly Reporting Requirement for Natural Gas and LNG Import/Export Holders, FE Docket No. 08-01-PO, DOE/FE Order No. 2464 (Feb. 6, 2008).

requests that it be authorized to register each LNG title holder for whom Gulf Coast seeks to export as agent.

Based on the reasoning provided in this application, Gulf Coast respectfully requests that the DOE/FE determine that Gulf Coast's request for long-term, multi-contract authorization to export natural gas is not inconsistent with the public interest. Accordingly, Gulf Coast requests that DOE/FE issue an order pursuant to Section 3 of the Natural Gas Act for authorization to export LNG.

Respectfully submitted,



Les Lo Baugh  
Brownstein Hyatt Farber Schreck, LLP  
Attorneys for  
Gulf Coast LNG Export

January 10, 2012

Brownstein | Hyatt  
Farber | Schreck

January 10, 2012

Mr. John Anderson  
Office of Fossil Energy [FE-34]  
U.S. Department of Energy  
1000 Independence Avenue, S.W.  
Washington, D.C. 20585

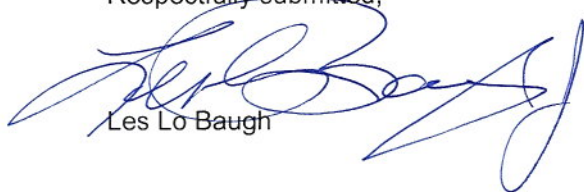
Les Lo Baugh  
310.500.4638 tel  
310.500.4602 fax  
LLoBaugh@bhfs.com

RE: Gulf Coast LNG Export, LLC  
FE Docket 12-05-LNG  
Application for Long-Term Authorization to Export Liquefied Natural Gas

Dear Sir:

This opinion is submitted pursuant to Section 590.202(c) of the U.S. Department of Energy's regulations. I have examined the Certificate of Formation of Gulf Coast LNG Export, LLC ("Gulf Coast") and other authorities as necessary, and have concluded that the proposed exportation of liquefied natural gas from the United States, as described in the application for long-term authorization to export LNG to which this Opinion of Counsel is attached as Appendix A, is within the corporate powers of Gulf Coast.

Respectfully submitted,



Les Lo Baugh

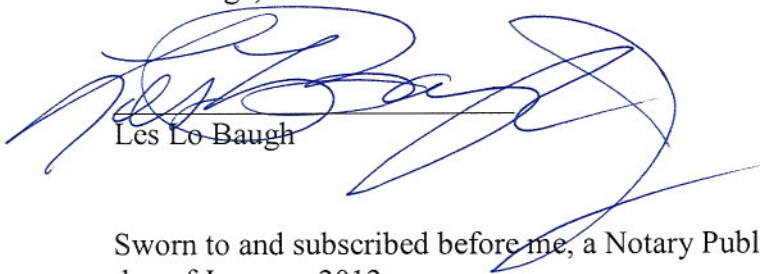
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VERIFICATION  
and  
CERTIFIED STATEMENT

County of Los Angeles


State of California

I, Les Lo Baugh, being duly sworn on his oath, do hereby affirm that I am a duly authorized representative of Gulf Coast LNG Export, LLC that I am familiar with the contents of this application; and that the matters set forth therein are true and correct to the best of my knowledge, information and belief.

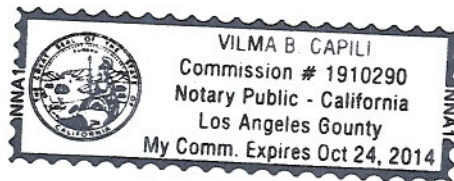


Les Lo Baugh

Sworn to and subscribed before me, a Notary Public, in and for the State of California, this 10th day of January, 2012.



Vilma Capili, Notary Public



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