

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

SABINE PASS LIQUEFACTION, LLC)
SABINE PASS LNG, L.P.)

Docket No. CP11-__-000

**APPLICATION OF SABINE PASS LIQUEFACTION, LLC
AND SABINE PASS LNG, L.P. FOR
AUTHORIZATION UNDER SECTION 3 OF THE NATURAL GAS ACT**

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Pursuant to Section 3(a) of the Natural Gas Act, as amended (“NGA”),¹ and Part 153 of the regulations of the Federal Energy Regulatory Commission (“Commission” or “FERC”),² Sabine Pass Liquefaction, LLC (“Sabine Pass Liquefaction”) and Sabine Pass LNG, L.P. (“Sabine Pass LNG”) (Sabine Pass Liquefaction and Sabine Pass LNG collectively, “Sabine Pass”) hereby file this Application for authorization to site, construct and operate liquefaction and export facilities (“Liquefaction Project” or “Project”) at the existing Sabine Pass LNG, L.P. liquefied natural gas (“LNG”) terminal located in Cameron Parish, Louisiana (“SPLNG Terminal”). Once the Liquefaction Project has been constructed and placed in service, the SPLNG Terminal will operate as a bi-directional LNG facility. Sabine Pass respectfully requests that the Commission grant this Application by September 2011.

In support of its request, Sabine Pass states as follows:

¹ 15 U.S.C. §717(b)(a) (2006).

² 18 C.F.R. Part 153 (2010).

I INFORMATION REGARDING THE APPLICANT

The exact legal name of Sabine Pass LNG is Sabine Pass LNG, L.P. Sabine Pass LNG is a Delaware limited partnership with its primary place of business located at 700 Milam Street, Suite 800, Houston, TX 77002. Sabine Pass LNG is a subsidiary of Cheniere LNG, Inc. (“Cheniere LNG”), which in turn, is a wholly-owned subsidiary of Cheniere Energy, Inc. (“Cheniere Energy”).

The exact legal name of Sabine Pass Liquefaction is Sabine Pass Liquefaction, LLC. Sabine Pass Liquefaction is a Delaware limited liability corporation with its principal place of business in Houston, Texas. Sabine Pass Liquefaction also is a wholly-owned subsidiary of Cheniere LNG and Cheniere Energy. Neither Sabine Pass LNG nor Sabine Pass Liquefaction is owned, in whole or in part, or subsidized, directly or indirectly, by any foreign government. Moreover, neither entity is contractually committed to ownership or subsidization by any foreign government entity.

II BACKGROUND

Sabine Pass LNG was granted NGA Section 3 authorization to site, construct and operate the SPLNG Terminal in Cameron Parish, Louisiana with a total send-out capacity of 4.0 billion cubic feet per day (“Bcf/d”), which was completed in two phases.³ On September 30, 2008, the Commission issued a letter order in Docket No. CP04-47-000 authorizing the commencement of service of Phase I, consisting of 2.6 Bcf/d of send-out capacity. Phase II, consisting of 1.4 Bcf/d of capacity, was authorized by the Commission to be placed into service by letter order dated September 15, 2009 in Docket No. CP05-396-000. On May 29, 2009, the Commission

³ *Sabine Pass LNG, L.P., Order Granting Authority Under Section 3 of the Natural Gas Act and Issuing Certificates*, 109 FERC ¶ 61,324 (2004) (“Phase I”); and *Sabine Pass LNG, L.P., Order Granting Authority Under Section 3 of the Natural Gas Act*, 115 FERC ¶ 61,330 (2006) (“Phase II”).

authorized Sabine Pass LNG to operate the SPLNG Terminal for the additional purpose of exporting LNG that has previously been imported into the United States.⁴ Sabine Pass herein is seeking authorization to add liquefaction capability to the SPLNG Terminal so that it may liquefy and export domestic natural gas supplies in addition to providing LNG import services.

On July 26, 2010, Sabine Pass filed a request to commence the Commission's National Environmental Policy Act ("NEPA")⁵ prefilng process for the Liquefaction Project. On August 4, 2010, the Director of the Commission's Office of Energy Projects issued a letter order in Docket No. PF10-24-000 granting the July 26 request. As part of the prefilng process, Sabine Pass participated in over 100 meetings with local, state and federal officials and individual and agency stakeholders to discuss the Project. Additionally, Sabine Pass participated in bi-weekly conference calls with the Commission staff and third-party contractor, as well as other resource agencies concerning the Project. Sabine Pass filed draft resource reports in Docket No. PF10-24-000 for review and comment. The resource reports included with the Environmental Report submitted herewith as Exhibit F address and incorporate the comments and suggested changes of the Commission staff and other resource agencies. As a result of its participation in the prefilng process, Sabine Pass has been able to better tailor the Application to address stakeholder concerns. Sabine Pass greatly appreciates the valuable input of the Commission staff and other stakeholders in the prefilng process.

⁴ *Sabine Pass LNG, L.P., Order Amending Section 3 Authorizations*, 127 FERC ¶ 61,200 (2009).

⁵ 42 U.S.C. § 4321.

III COMMUNICATIONS

The persons to whom correspondence and communications concerning this Application should be directed and upon whom service is to be made are as follows:

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IV EXECUTIVE SUMMARY

Sabine Pass proposes to add liquefaction capability to the SPLNG Terminal, transforming it into a bi-directional facility capable of liquefying domestic natural gas for export, in addition to regasifying imported foreign-sourced LNG. Sabine Pass proposes to utilize the existing infrastructure at the SPLNG Terminal to offer third-party customers bi-directional services. When completed, the Liquefaction Project will be capable of processing pipeline quality natural gas from the pipelines interconnected with the SPLNG Terminal. The Project will have the ability to liquefy the natural gas, store the LNG, and export approximately 16 million metric tonnes of LNG per annum (“mtpa”) via LNG carriers.

No additional marine facilities are required for the proposed Liquefaction Project. The Liquefaction Project will utilize the five existing LNG storage tanks that have been constructed as part of the SPLNG Terminal. Additionally, a sixth LNG storage tank (S-106) that was authorized by the Commission in Docket No. CP05-396-000 will be constructed to handle the additional storage requirements related to development of Stage 2 of the proposed Project.

The Liquefaction Project has been proposed as a result of the improved outlook for domestic natural gas production, as evidenced by the rapid growth in supplies from shale gas-bearing formations in the U.S. The export of natural gas as LNG would provide a further incentive for the development of emerging sources of domestic natural gas and would result in the following benefits, all of which are consistent with the public interest:

- Stimulate the Louisiana state, regional and national economies through job creation, increased economic activity and tax revenues, including the direct creation of approximately 3,000 engineering and construction jobs during the course of the Project and, indirectly, 30,000-50,000 permanent jobs in the exploration and production sector;
- Promote domestic production of petroleum and reduced reliance on foreign sources of oil by encouraging the drilling of wells in areas where there is a significant amount of natural gas associated with crude oil and natural gas liquids (“NGL”);
- Further the President’s National Export Initiative,⁶ by improving U.S. balance of payments through the exportation of approximately 2 Bcf/d of natural gas valued at approximately \$5 billion, and the displacement of \$1.7 billion in NGL imports;
- Raise domestic natural gas productive capacity and promote stability in domestic natural gas pricing;
- Promote liberalization of the global natural gas trade through the fostering of a global, liquid market, based on prices cleared in free and openly traded natural gas markets;
- Advance national security and the security of U.S. allies through diversification of global natural gas supplies; and
- Increase economic trade and ties with foreign nations, including neighboring countries in the Americas, and displace environmentally damaging fuels in those countries.

V DESCRIPTION OF PROPOSAL

The Project will be located at the existing SPLNG Terminal in Cameron Parish, Louisiana, wholly within the facility boundaries previously reviewed and authorized under

⁶ See Exec. Order No. 13,534, 75 Fed. Reg. 12,433 (Mar. 16, 2010), available at <http://www.whitehouse.gov/the-press-office/executive-order-national-export-initiative> (“A critical component of stimulating economic growth in the U.S. is ensuring that U.S. businesses can actively participate in international markets by increasing their exports of goods, services, and agricultural products. Improved export performance will, in turn, create good high-paying jobs.”).

FERC Docket Nos. CP04-47-000 and CP05-396-000.⁷ All facilities approved in these two dockets have been constructed and are in operation, with the exception of the sixth LNG tank (S-106) approved in Docket No. CP05-396-000. The Liquefaction Project will involve converting approximately 191.2 acres of the leased site for construction and operation of four liquefaction trains. Construction also will involve re-disturbance of 64.77 acres of previously disturbed land within the SPLNG Terminal site.

The Project, which will be capable of processing pipeline quality natural gas and liquefying, storing and exporting approximately 16 mtpa, will be constructed in two stages: Liquefaction Trains 1 and 2 will be built in Stage 1, commencing in January 2012; Liquefaction Trains 3 and 4 will be built in Stage 2 when commercially feasible. The Project includes the following major components:

A. Liquefaction Project Stage 1

(1) LNG Trains 1 and 2

Stage 1 of the Liquefaction Project will include two (2) ConocoPhillips Optimized CascadeSM LNG Process Trains (LNG Trains 1 and 2), each capable of a liquefaction capacity of approximately 4.0 mtpa. Each LNG Train contains the following equipment:

- Gas treatment facilities to remove solids, CO₂, sulfur, water, and mercury;
- Six standard annular combustor aero-derivative LM2500+ G4 gas turbine-driven refrigerant compressors, each rated at 34.7 MW, using water injection for emissions control;
- Ethylene cold box, methane cold box, and core-in kettle heat exchangers for cooling and liquefying the natural gas;
- Waste heat recovery systems for regenerating the gas driers and amine system;

⁷ The location, size and environmental conditions of Sabine Pass LNG's currently authorized facilities are fully described in the applications, Environmental Reports, and orders in Docket Nos. CP04-47-000 and CP05-396-000.

- Approximately 160 induced draft air coolers, for cooling the refrigerants;
- Associated fire and gas detection and safety systems;
- Associated control systems and electrical infrastructure;
- Utility connections and distribution systems as required;
- Piping, pipe racks, foundations, and structures within the LNG train battery limits;
- Interconnections to existing facilities;
- New and remodeled buildings to accommodate increased equipment, facilities, and operations and maintenance personnel required to operate the liquefaction trains; and
- Additional new utilities and support infrastructure, and modifications to the existing SPLNG Terminal to accommodate LNG Trains 1 and 2, as required.

(2) Modifications to Existing SPLNG Terminal

Modifications required to the SPLNG Terminal facilities include:

- Replacement of ten (10) existing in-tank LNG pumps;
- Improvements to Lighthouse Road and plant roads to service the new facilities;
- Expansions to security and perimeter access control systems;
- Expansions to telecom, IT, CCTV, and other systems;
- Expansions to existing DCS systems;
- Modifications to existing SPLNG Terminal buildings including:
- Control Building modifications to add systems for the liquefaction trains and other new facilities; and
- Maintenance/Warehouse Building modifications to convert it to maintenance functions only.
- New buildings that will be built for the Liquefaction Project include:
 - Warehouse to store spare parts and consumables;
 - Waste and materials storage building for chemicals, lubricants, and other hazardous substances;
 - Building for lockers, canteen, offices, etc.; and
 - Remote I/O buildings, operator shelter, and substations as required.

(3) Marine Terminal and LNG Transfer Lines

No additional marine facilities are required for the proposed Liquefaction Project. The Liquefaction Project and the existing SPLNG Terminal will utilize the same marine berth and will load and unload at the same rate (12,000 m³/hr). Since the loading rates proposed for the Liquefaction Project are the same as the unloading rates for the SPLNG Terminal, no increase in ship traffic is proposed. In this regard, the number of ships utilizing the SPLNG Terminal will not increase from the maximum currently authorized of 400.

The check valve currently installed in the LNG unloading lines at the SPLNG Terminal will be modified to simplify loading and unloading operations. As noted above, the unloading and loading rate will remain at the current rate of 12,000 m³/hour. Ten (10) of the existing fifteen (15) in-tank pumps in the LNG storage tanks will be replaced with larger pumps (1,600 m³/hr). The replacement of these pumps will allow Sabine Pass to run fewer pumps to achieve the 12,000 m³/hr rate and will allow for redundancy and increased efficiency of the process. No modifications will be required for the LNG loading arms, berthing equipment, basin, or other portions of the marine terminal.

(4) LNG Storage

The Liquefaction Project (Stage 1) will utilize the existing LNG storage tanks that have been constructed as part of the SPLNG Terminal.

(5) LNG Vaporization/Natural Gas Sendout

Except for the required tie-ins to the existing SPLNG Terminal facilities, no impacts or modifications will occur to the existing LNG vaporization facilities. Modifications will be required to the interconnected Cheniere Creole Trail Pipeline, L.P. (“Creole Trail”) system to allow for the bi-directional flow of gas. The precise nature and location of required changes to the Creole Trail system cannot be determined until Sabine Pass has finalized commercial

arrangements with customers of the Liquefaction Project. Once such commercial arrangements are complete, Sabine Pass expects that Creole Trail will file with the Commission for the authorization required to modify its pipeline system to accommodate the bi-directional flow of gas.

Additionally, 400 feet of new 42-inch diameter pipeline will be required on the Creole Trail system to supply feed gas to the Liquefaction Project. Included in the new pipeline segment will be inlet feed, gas filtering and separation facilities as well as measurement facilities. Sabine Pass understands that Creole Trail likely will construct these facilities pursuant to its blanket construction certificate issued under Subpart F of Part 157 of the Commission's regulations in Docket No. CP05-358-000.

B. Liquefaction Project Stage 2

Stage 2 of the Liquefaction Project will include an additional two (2) ConocoPhillips Optimized CascadeSM LNG Process Trains (LNG Trains 3 and 4), each capable of a liquefaction capacity of approximately 4.0 mtpa. These LNG Trains will be essentially identical to LNG Trains 1 and 2, as described above.

Additional utilities and support infrastructure required for Stage 2 of the Liquefaction Project include:

- New aero-derivative LM2500+ G4 gas turbine generators ("GTG") capable of generating approximately 30 MW of electrical power using water injection for emissions control. At least one (1) GTG will be installed as part of Stage 2 of the Liquefaction Project. A second GTG may also be added during Stage 2 to increase reliability of the electrical system by having two spare GTGs available;
- Transformers, and other electrical accessories to supplement existing onsite power generation;
- Additional wet flare and dry flare to protect LNG Trains 3 and 4;

- Increase to the demineralized water systems to handle the additional water load for the gas turbine drivers for the refrigerant compressors;
- Additional interconnecting pipe racks, roads, and other infrastructure; and
- Modifications and additions to existing utilities and infrastructure to accommodate LNG Trains 3 and 4.

VI PUBLIC INTEREST

Section 3(a) of the NGA provides that “[t]he Commission shall issue [an] order upon application, unless...it finds that the proposed exportation...will not be consistent with the public interest.”⁸ Section 153.7(c) of the Commission’s regulations, which implements Section 3(a) of the NGA, requires a showing that the proposal is not inconsistent with the public interest.⁹ The Commission previously has found that the SPLNG Terminal meets the public interest standard. Through this Application, Sabine Pass is requesting authorization to operate the SPLNG Terminal for the additional purpose of liquefying and exporting domestic natural gas as LNG. As demonstrated herein, this request is consistent with the public interest. Following

⁸ 15 U.S.C. § 717(b)(a).

⁹ 18 C.F.R. § 153.7(c). Section 153.7(c) of the Commission’s regulations also requires an applicant under NGA Section 3(a) to demonstrate that the proposed Project:

- (i) 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;
- (ii) Will not impair the ability of the applicant to render transportation service in the United States at reasonable rates to its existing customers; and,
- (iii) Will not involve any existing contract(s) between the applicant and a foreign government or person concerning the control of operations or rates for the delivery or receipt of natural gas which may restrict or prevent other United States companies from extending their activities in the same general area, with copies of such contracts.

Sabine Pass submits that the proposed Project complies with the requirements set forth at Section 153.7(c) for the reasons discussed in this Section VI. Furthermore, in compliance with Section 153.7(c)(1)(iii), Sabine Pass submits that the proposal herein does not involve any existing contracts between Sabine Pass and a foreign government or person concerning the control of operations or rates for the delivery or receipt of natural gas which may restrict or prevent other U.S. companies from extending their activities in the same general area. Pursuant to *Hackberry LNG Terminal, L.L.C.*, 101 FERC ¶61,294 (2002), and Section 311 of the Energy Policy Act of 2005 (Pub. L. 109–58, 42 U.S.C. § 717(b)), the Liquefaction Project will not provide open access terminalling and transportation services under Part 284 of the Commission’s regulations, but rather will be utilized to provide LNG services pursuant to commercial arrangements with third-party customers.

construction of the Liquefaction Project, the SPLNG Terminal will operate as a bi-directional LNG terminal, which will help to stabilize market price volatility since gas may be imported when demand is high in the United States and exported when demand is low. The additional natural gas productive capacity created by the permitting of LNG exports would be available to meet unexpected shifts in domestic natural gas market conditions.

In support of its proposal to export domestic natural gas supplies as LNG, Sabine Pass commissioned reports by Advanced Resources International, Inc. (“ARI”) and Navigant Consulting, Inc. (“NCI”) to assess domestic need for the natural gas to be exported from the Liquefaction Project. The first ARI report, *U.S. Natural Gas Resources and Productive Capacity* (“ARI Resource Report”), was commissioned to evaluate the scope of natural gas resources in the United States and their potential for future recovery. A second report from ARI, *Domestic Hydrocarbon Liquids Production from Gas Shales and Other Unconventional Gas Resources* (“ARI Liquids Report”), was commissioned to evaluate the potential increase in petroleum liquids produced in association with certain unconventional formations due to the Project. The NCI report, *Market Analysis for Sabine Pass LNG Export Project* (“NCI Report”), was commissioned to evaluate the market price impact of LNG exports from the SPLNG Terminal under several future U.S. demand scenarios.¹⁰ Both the ARI Resource Report and the NCI Report, as well as publicly available information, indicate that the U.S. has significant natural gas resources available at modest prices that are sufficient to meet projected future domestic needs.

¹⁰ ARI is a geological and engineering consulting firm which specializes in unconventional hydrocarbon geology, and has played an instrumental role over the last three decades in advancing the industry’s understanding of the domestic unconventional resource base. NCI is an international consultant to the energy and utility industry. The ARI and NCI reports are attached hereto as Exhibit Z.

A. The Project Will Not Have a Material Impact on the U.S. Supply/Demand Balance

Domestic gas production has been on an upward trend in recent years as rapid growth in supply from unconventional basins has more than compensated for declines in conventional onshore and offshore formations. Since 2005, when horizontal drilling began in earnest in the Barnett Shale formation in north-central Texas, U.S. dry gas production has grown 14.0%, to 20.6 trillion cubic feet (“Tcf”) (56.4 Bcf/d) in 2009, representing the highest U.S. production levels since 1974.¹¹

Preliminary data point to continued growth in domestic production despite a significant drop in U.S. natural gas drilling activity from peak levels in 2008.¹² Domestic natural gas production grew sequentially in eight of the ten months reported to date for 2010 by the U.S. Energy Information Administration (“EIA”) and EIA estimates that U.S. dry gas production totaled 59.8 Bcf/d in October 2010, a 4.1 Bcf/d (7.4%) increase compared to October 2009 dry production of 55.7 Bcf/d.¹³ Increased drilling productivity in certain prolific shale formations, particularly the Marcellus, Fayetteville and Haynesville shales, has enabled domestic production to continue expanding despite a reduction in industry upstream development.

Market price volatility resulting from the persistent growth in domestic gas production in recent years has forced the periodic shut-in of actively producing wells in marginal gas-producing fields. Despite a summer of above-normal temperatures and strong fuel demand for

¹¹ See EIA, *Natural Gas Gross Withdrawals and Production* (Dec. 28, 2010), http://www.eia.gov/dnav/ng/ng_prod_sum_dcu_NUS_a.htm.

¹² There were 906 rigs drilling for natural gas in the U.S. as of the week ended January 21, 2011, 43.6% below peak drilling levels of 1,606 rigs for the week ended September 12, 2008. Baker Hughes, *North America Rotary Rig Count* (Jan. 21, 2011) http://files.shareholder.com/downloads/BHI/913806705x0x436287/BD204897-F31C-4AAD-AFF9-E988388E82D2/US_Rig_Report_012111.xls.

¹³ See EIA, *U.S. Dry Natural Gas Production* (December 28, 2010), <http://www.eia.gov/dnav/ng/hist/n9070us2m.htm>.

electricity generation,¹⁴ natural gas prices fell to new lows in October 2010 on ample supplies and record storage inventories.¹⁵ Natural gas producers once again were forced to shut-in production to cope with low wellhead prices,¹⁶ and investors plan to reduce future capital investments in the natural gas sector on low price expectations.¹⁷

The optimistic outlook for future U.S. natural gas production has been reflected in EIA's recent preliminary release of its Annual Energy Outlook 2011 ("AEO 2011"), in which EIA has more than doubled its estimate of technically recoverable U.S. shale gas reserves, to 827 Tcf from 353 Tcf.¹⁸ The EIA predicts that U.S. natural gas production will grow at a 0.8% annual rate between 2011 and 2035, outstripping U.S. natural gas demand growth over this period.¹⁹ EIA further forecasts that U.S. long-term natural gas exports will grow at a 3.4% annual rate while natural gas imports will decline by -0.9% annually, such that projected U.S. net imports by 2035 will decline to 0.37 Tcf.²⁰

The robust potential for future U.S. natural gas supply has been reflected in other recent industry evaluations. The Potential Gas Committee of the Colorado School of Mines ("Potential Gas Committee") in June 2009 raised its estimates of the U.S. technically recoverable gas resource base by 515 Tcf (+39%) to 1,836 Tcf at year-end 2008.²¹ Including 238 Tcf of established proved domestic natural gas reserves, the Potential Gas Committee determined that

¹⁴ U.S. population-weighted cooling degree days over the June 2010-August 2010 period were 23.8% above normal, according to data from the National Oceanic and Atmospheric Association. ftp://ftp.cpc.ncep.noaa.gov/htdocs/products/analysis_monitoring/cdus/degree_days/archives/Cooling%20Degree%20Days/monthly%20cooling%20degree%20days%20state/2010/.

¹⁵ *Nymex expires at lowest level in 13 months*, Platts Gas Daily, Oct. 28, 2010, at 1.

¹⁶ *CEO: Prices led Conoco to shut in 185,000 Mcf/d*, Platts Gas Daily, Oct. 28, 2010, at 1.

¹⁷ *Barclays Says U.S. E&Ps to Spend More in Oily Shales, Less in Gas*, NGI's Shale Daily, Dec. 16, 2010, at 1.

¹⁸ See EIA, DOE, *Annual Energy Outlook 2011, Early Release Overview* (Dec. 16, 2010), [http://www.eia.gov/forecasts/aeo/pdf/0383er\(2011\).pdf](http://www.eia.gov/forecasts/aeo/pdf/0383er(2011).pdf). See also *EIA more than doubles shale reserve estimate*, Platts Gas Daily, Dec. 17, 2010, at 1.

¹⁹ See *AEO 2011*.

²⁰ *Id.*

²¹ See Press Release, Potential Gas Committee, Potential Gas Committee Reports Unprecedented Increase In Magnitude of U.S. Natural Gas Resource Base (June 18, 2009), <http://www.mines.edu/Potential-Gas-Committee-reports-unprecedented-increase-in-magnitude-of-U.S.-natural-gas-resource-base>.

the U.S. possesses future available gas supply of 2,074 Tcf,²² the highest resource evaluation in the group's 44-year history and over 90 years of domestic market needs, based on 2009 consumption levels.²³

In a recently published study by the Massachusetts Institute of Technology ("MIT") entitled, *The Future of Natural Gas* ("MIT Study"), MIT estimates that the U.S. has a mean recoverable resource base of approximately 2,100 Tcf.²⁴ This estimate includes 650 Tcf of recoverable shale resources, "approximately 400 Tcf [of which] could be economically developed with a gas price at or below \$6/million British thermal units ("MMBtu") at the well-head."²⁵ According to the MIT Study's mean resource estimate, U.S. gas production will rise by 40% between 2005 and 2050.

In addition, the ARI Resource Report provides an independent analysis of the unconventional natural gas resource base in the U.S. to supplement publicly available information on conventional onshore and offshore gas resources. ARI estimates that the U.S. possesses technically recoverable natural gas resources totaling 2,585 Tcf, including 2,286 Tcf in the Lower 48 state region and 299 Tcf in Alaska.²⁶ Of this total, 246 Tcf represent proved natural gas reserves and 2,338 Tcf comprise undiscovered or inferred resources.²⁷ Unconventional gas-bearing formations account for 53% (or 1,373 Tcf) of technically recoverable domestic gas resources and include 700 Tcf of recoverable reserves from shale formations, 567 Tcf from tight sandstones and 106 Tcf from coalbed formations.²⁸

²² *Id.* at 2.

²³ U.S. natural gas demand totaled 22.8 Tcf in 2009. EIA, *Natural Gas Consumption by End Use* (Dec. 28, 2010), http://www.eia.gov/dnav/ng/ng_cons_sum_dcu_nus_a.htm.

²⁴ MIT Energy Initiative, MIT, *The Future of Natural Gas*, at 9 (2010), <http://web.mit.edu/mitei/research/studies/naturalgas.html>.

²⁵ *Id.* at xii.

²⁶ See Exhibit Z, ARI, *U.S. Natural Gas Resources and Productive Capacity*, Aug. 26, 2010, at 8.

²⁷ *Id.* Total differs slightly due to rounding.

²⁸ *Id.*

The ARI Resource Report notes that assessments of the domestic natural gas resource base are not static and have expanded over time due to improvements in oilfield service technologies such as horizontal drilling, multi-well pad drilling, and improved fracturing and stimulation of tight gas formations.²⁹ ARI projects that technology gains will continue to drive production costs lower and augment recoverable natural gas reserves in the future. Remaining recoverable domestic shale gas resources, for example, are projected to increase 18.9% by 2035 to 853 Tcf from their assessment of 711 Tcf at the start of 2009.³⁰

The ARI Resource Report also examines the market impact of its unconventional gas forecast in the context of EIA's Reference Case in its Annual Energy Outlook 2010 ("AEO 2010") for the U.S. natural gas market through 2035.³¹ Using the AEO 2010 reference natural gas case outputs and, holding all other variables constant, ARI used its Technology Model for Unconventional Gas Supply to re-assess the outlook for domestic unconventional gas productive capacity assuming EIA's projected track for future U.S. natural gas prices.³² This substitution is appropriate given that, updates to its AEO 2011 notwithstanding, EIA historically has underestimated the future contributions of unconventional gas, and particularly shale gas, to domestic markets.³³

Assuming the same natural gas price outlook as generated by AEO 2010, ARI estimates U.S. unconventional gas productive capacity would grow to 69.0 Bcf/d in 2035 from 36.3 Bcf/d

²⁹ See *id.* at 9.

³⁰ *Id.* at 9, 35-38.

³¹ See EIA, DOE, *Annual Energy Outlook 2010* (May 11, 2010), <http://www.eia.doe.gov/oiaf/archive/aeo10/index.html>.

³² *AEO 2010* estimates U.S. natural gas prices will rise from \$4.50/MMBtu to \$6.64/MMBtu through 2020, while long-term prices are projected to increase from \$6.74/MMBtu to \$8.88/MMBtu between 2021 and 2035. See *id.* at Table 13, http://www.eia.doe.gov/oiaf/aeo/excel/aeotab_13.xls.

³³ NCI, *North American Natural Gas Supply Assessment*, at 5-6 (July 4, 2008), <http://www.cleanskies.org/pdf/navigant-natural-gas-supply-0708.pdf>.

in 2010.³⁴ Natural gas produced from shales would account for 26.9 Bcf/d, or 82.3% of the 32.7 Bcf/d in projected growth in domestic productive capacity from unconventional geologic formations over the 25-year timeframe.³⁵ ARI subsequently merged its findings with the AEO 2010's projections for conventional domestic dry production, including the estimated start of a 4.5 Bcf/d pipeline from Alaska's North Slope to the Lower 48 states in 2024, and concluded that U.S. dry natural gas productive capacity would grow to 92.7 Bcf/d in 2035 from 58.6 Bcf/d in 2010, given the future market price track presented in the AEO 2010 report.³⁶ This growth in domestic productive capacity would well exceed expectations for future U.S. demand, projected by EIA in AEO 2010 to grow to 68.1 Bcf/d in 2035 from 64.7 Bcf/d in 2010.³⁷ Under the modified supply case presented by ARI, domestic natural gas productive capacity would exceed projected U.S. demand by 11.0 Bcf/d in 2015, 19.9 Bcf/d in 2025, and 28.7 Bcf/d in 2035.³⁸ EIA, in its early release of AEO 2011, has subsequently raised its estimate of future U.S. natural gas demand to 74.4 Bcf/d by 2035, based on its more robust outlook for domestic production.³⁹ Under these new demand estimates, the U.S. would continue to experience growth in surplus gas productive capacity based on ARI's supply projections, rising to 18.3 Bcf/d by 2035.

The ARI Resource Report and the publicly available information demonstrate that the U.S. has sufficient natural gas resources available at modest prices to meet projected domestic demand over the next 20 or more years. Further, the ARI Resource Report establishes that the availability of new natural gas reserves is likely to continue expanding into the future as new

³⁴ *ARI Resource Report* at 23.

³⁵ *Id.* at 27.

³⁶ *Id.* at 23-24.

³⁷ *Id.* at 24.

³⁸ *Id.*

³⁹ *AEO 2011*, *supra* note 18.

unconventional formations are discovered and the oil and gas industry continues to improve drilling and extraction techniques.

B. National Demand Outlook Market Study

Sabine Pass commissioned the NCI Report to assess the potential demand impact on U.S. natural gas markets under several potential regulatory scenarios, including environmental restrictions on greenhouse gas (“GHG”) emissions. NCI’s Gas Pipeline Consumption Model (“GPCM”) subsequently was utilized to measure the market pricing impact of LNG exports from the SPLNG Terminal at these respective demand levels.

Two future demand cases were developed for consideration by NCI: One case assuming *status quo* energy policy laws (“GHG As Is Case”), and a second “stress case” in which new regulations and policies are adopted that promote the future use of natural gas in the United States (“GHG Plus Case”).

The GHG As Is Case assumes no future regulations are imposed on GHG emissions from the *status quo*, and is represented in NCI’s modeling of the AEO 2010 Reference Case for future U.S. natural gas demand in the electricity sector. The GHG Plus Case was designed to maximize penetration of natural gas in the domestic transportation and electric-generating sectors. The GHG Plus Case is based on NCI’s own Spring 2010 forecast of future electric sector demand, and assumes (i) adoption at the state and federal level of a carbon tax on GHG emissions and (ii) the adoption of extensive financial incentives for the conversion of the domestic commercial truck fleet to natural gas vehicles (“NGVs”).

(1) Carbon Tax

The GHG Plus Case assumes the start of a national carbon tax on GHG emissions starting in 2015 at \$20.10 per ton (\$1.26 per MMBtu),⁴⁰ increasing to \$54.40 per ton (\$3.41 per MMBtu) in 2035, based on the U.S. Environmental Protection Agency's ("EPA") analysis of the proposed American Power Act of 2010.⁴¹ The addition of a carbon tax is assumed by NCI to reduce coal-fired generation output in the United States by 1.0% per year starting in 2015 and continuing through 2035, to be replaced by an equivalent quantity of natural gas required for substitute power supplies.⁴²

(2) Proliferation of Natural Gas Vehicles

The GHG Plus Case also assumes that incentives are adopted at the federal level to promote the conversion of heavy-duty commercial trucks to NGVs and to expand construction of natural gas-fueling infrastructure. NCI derived the policy incentives and market impacts related to NGVs from the "Reference Case 2027 Phaseout with Expanded Market Potential" ("Reference Case 2027") natural gas market scenario developed by EIA as a modification to its Reference Case in the AEO 2010.⁴³ The Reference Case 2027 assumes financial subsidies would be adopted which effectively equalize the purchasing costs of new heavy-duty NGVs relative to diesel-powered counterparts, and that new tax incentives would be created for natural gas refueling stations of \$100,000 per facility and for natural gas transportation fuel of \$0.50 per

⁴⁰ Assumes 125 lbs per MMBtu.

⁴¹ EPA's analysis is available at <http://www.epa.gov/climatechange/economics/economicanalyses.html#apa2010>. See also *American Power Act*, S. Discussion Draft, 111th Cong. (2010), http://lieberman.senate.gov/assets/pdf/APA_full.pdf.

⁴² See Exhibit Z, NCI, *Market Analysis for Sabine Pass LNG Export Project* (Aug. 2010), at 15.

⁴³ *AEO 2010*, *supra* note 31, at 42-46.

gallon of gasoline equivalent.⁴⁴ These incentives, according to EIA's scenario, are assumed to begin in 2011 and be phased out in 2027.

C. Market Demand Impacts

Outputs from NCI's GPCM model demonstrate that impacts on future demand between the GHG As Is Case and GHG Plus Case are concentrated in the electricity-generating and transportation sectors.

In the transportation sector, the impacts of federal subsidies promoting natural gas fuel use are not apparent until the latter half of the long-term forecast period. Reflecting outcomes in the EIA Reference Case 2027, domestic demand for natural gas in the transportation sector would total 0.7 Bcf/d in 2020 under the GHG Plus Case,⁴⁵ a negligible gain compared to the *status quo* forecast for 0.2 Bcf/d demand in 2020 under the GHG As Is Case.⁴⁶ In aggregate, NCI projects that total U.S. natural gas consumption would grow to 83.1 Bcf/d by 2035 under the GHG Plus Case, compared to 68.9 Bcf/d under the GHG As Is case.⁴⁷

D. Natural Gas Pricing Impacts

The two future demand scenarios designed for the U.S. natural gas market were subsequently inputted into NCI's GPCM model, in order to establish baselines for future U.S. natural gas prices. The baseline pricing cases were then compared to the market price impacts of adding 1 Bcf/d to 2 Bcf/d of liquefaction capacity at the SPLNG Terminal under both the GHG As Is Case and GHG Plus Cases. These combined five scenarios all assume that other parameters in NCI's Spring 2010 forecast remain constant.

⁴⁴ Without incentives, EIA estimates heavy-duty NGVs are from \$17,000 to \$60,000 more expensive than their diesel counterparts, depending on the vehicle class size. *See id.*

⁴⁵ *NCI Report, supra* note 42, at 40.

⁴⁶ *See id.* at 36.

⁴⁷ *See id.* at 36, 40.

NCI's forecast of future domestic natural gas production is based on its 2008 study of the subject prepared for the American Clean Skies Foundation, with some updates as knowledge of the U.S. shale resource base has expanded.⁴⁸ NCI estimates maximum recoverable reserves from U.S. shale resources to be 842 Tcf, while maximum recoverable reserves for all U.S. gas formations total 2,247 Tcf.⁴⁹

Under the GHG As Is Case, U.S. gas production is projected to grow to 66.2 Bcf/d in 2035 from estimated production of 56.0 Bcf/d in 2010.⁵⁰ This compares to estimated domestic production of 75.2 Bcf/d in 2035 under the GHG Plus demand scenario.⁵¹ Much of the difference in estimated U.S. gas production results from variance in shale resource recovery. In the GHG Plus Case, U.S. shale production would total 33.6 Bcf/d in 2035 compared to 29.4 Bcf/d in the GHG As Is Case.⁵²

Modeling the GHG As-Is Case and assuming no exports of LNG from the Liquefaction Project, NCI projects that Henry Hub forward prices would rise from \$3.29/MMBtu in 2015 to \$6.97 per MMBtu in 2035. Under the GHG Plus Case and assuming no LNG exports from Sabine Pass, Henry Hub forward prices would average \$4.50 in 2015 and steadily rise to \$11.43 per MMBtu by 2035.⁵³

Under the GHG As Is case, the addition of 1.0 Bcf/d of LNG exports to the GHG As-Is Case (Moderate Export) increases Henry Hub forward prices by only \$0.20 per MMBtu (6.1%) in 2015, and by only slightly more, \$0.23 per MMBtu (3.3%), in 2035, compared to the no-export GHG As-Is Case.⁵⁴ Replacing the 1.0 Bcf/d with 2.0 Bcf/d of liquefaction exports

⁴⁸ See *NCI Report*, *supra* note 42.

⁴⁹ *Id.* at 10.

⁵⁰ *Id.* at 42.

⁵¹ *Id.* at 45

⁵² *Id.* at 19 (Figure 11), 29 (Figure 21).

⁵³ See *NCI Report*, *supra* note 42, at 47.

⁵⁴ *Id.*

increases Henry Hub prices by \$0.35 per MMBtu (10.6%) in 2015 and \$0.49 per MMBtu (7.0%) in 2035, compared to the no-export GHG As-Is Case.

The addition of 2.0 Bcf/d of LNG exports from the Liquefaction Project to the GHG Plus Case moves Henry Hub forward prices by \$0.52 per MMBtu (4.0%) in 2015, and \$0.90 per MMBtu (7.9%) in 2035, compared to the no-export GHG Plus Case. Significantly, the analysis shows that, on a percentage basis, the increases in price associated with the addition of liquefaction demand are similar across all cases. In the lower demand GHG As-Is Case, the percentage increases in prices are very similar to the price increases in the high-demand cases. The test cases in both demand scenarios consistently produce single-digit-percentage increases in future natural gas prices, and demonstrate that the impact of LNG exports from the Liquefaction Project is negligible on future U.S. natural gas market prices.

Furthermore, it must be emphasized that actual market price impacts of the Liquefaction Project are expected to be more conservative relative to results generated by NCI's modeling. Under NCI's modeling assumptions, LNG exports are "force fed" through the GPCM model at effective 100% utilization rates. The actual price impact is expected to be lower given that (i) the liquefaction units, once operational, will require normal seasonal maintenance that will reduce periodically operational availability, (ii) Sabine Pass anticipates a tariff structure that creates no contractual compulsion to export LNG if global and domestic market conditions do not provide for profitable activity (if domestic natural gas costs rise, the price pressure will reduce the incentive to purchase natural gas for export), (iii) a phased-in approach will be required over a minimum of three calendar years to construct the full 16 mtpa of liquefaction capacity, further diluting the Liquefaction Project's market influence as stated in the NCI Report, and (iv) NCI has applied relatively conservative assumptions behind the potential for future

domestic resource recovery. Thus, the market impacts of LNG exports as established under the NCI scenarios represent a maximalist perspective on future outcomes.

E. Supply-Demand Balance Indicates a Lack of Regional/National Need

It is evident from the current supply/demand balance of natural gas in the United States that the export of domestic natural gas production, as proposed by the Project, is in the public interest. U.S. natural gas production has been steadily increasing in recent years while domestic demand since 2008 has experienced a significant retrenchment owing to the global recession. Robust supply and a dimmed outlook for market growth have led to historically low prices, prompting domestic producers to slow drilling, defer completions of recently drilled wells and reduce plans for future investments in natural gas producing basins.⁵⁵ Market price volatility during this period also has forced the periodic shut-in of actively producing wells in marginal gas-producing fields, suggesting that domestic natural gas productive capacity has exceeded the ability of the United States market to absorb incremental supplies.⁵⁶ The ability to export domestic gas as LNG will greatly expand the market scope and access for domestic natural gas producers and thus serve to encourage domestic production at times when U.S. market prices might not otherwise do so. Such production will be available to supply domestic markets and thereby serve to moderate U.S. gas price volatility and keep prices for U.S. natural gas consumers at reasonable levels.

⁵⁵ Three of the four articles on the cover of the August 4, 2010 edition of *Gas Daily* concern the impact on producers and production of the current over supply situation: *Chesapeake lays it down until prices pass \$6; Prices prompt Petrohawk to trim shale spending* and *Analysts ponder long-term impact of low prices*. *Platts Gas Daily*, Aug. 4, 2010, at 1.

⁵⁶ *One-third of wells on Wyoming state land shut in*, *Platts Gas Daily*, Oct. 28, 2009 (“More than a third of all oil and gas wells operating on Wyoming state lands have been shut in, primarily in response to low wellhead prices”). See also *Encana Shuts in Gas Wells on Low Prices*, *Natural Gas Intelligence*, June 22, 2009 (“Because of low natural gas prices EnCana Corp. has shut in some wells in both the United States and Canada”).

The ARI Resource Report further establishes that U.S. natural gas resources will exceed future domestic needs, and that, absent a sustained downturn in prices, surplus productive capacity will remain a fixture of the U.S. natural gas market. ARI's estimate of potentially 92.7 Bcf/d in future U.S. natural gas productive capacity stands in contrast to estimates by NCI of gas production of up to 75.6 Bcf/d in 2035 under its GHG Plus, High Export demand scenario.⁵⁷ The differences between the ARI and NCI forecasts represent dissimilar comparisons of future domestic production given the different burdens in modeling price-responsive supply by the two consultants. In the case of ARI, a given future price track was pre-assumed to determine future natural gas productive capacity, while NCI's models predict actual U.S. gas production at prevailing market prices, given the assumed interaction of marginal supply and demand economics at a given future point.

The NCI supply outlook also reflects relatively conservative assumptions on future recovery from domestic shale gas resources compared to the ARI Resource Report. NCI assumes that no new economically recoverable reserves will be discovered in future U.S. unconventional basins, while ARI assumes that future resources will be discovered and that further gains can be expected in technology and drilling practices applied to recover potential reserves. Furthermore, NCI's GPCM modeling does not assign weight to the additional value created from producing NGLs from certain shale formations, a factor that is given consideration in ARI's forecasting and would, all else being equal, yield a more robust future outlook for shale gas production.

Significantly, both consultants have concluded that the potential for future recovery of U.S. gas production is more robust than presented in prevailing EIA forecasts. In the ARI Resource Report, this relatively bullish outlook is manifest in the creation of excess productive

⁵⁷ *NCI Report, supra* note 42, at 46.

capacity, while NCI's modeling yields significantly greater production from domestic shale formations in the future at relatively lower prices than assumed by EIA. Both reports conclude that U.S. natural gas resources are sufficient to meet all future demand scenarios under consideration and, therefore, the exporting of up to 2 Bcf/d of natural gas as LNG will not be inconsistent with the public interest.

F. The Project Will Result in Significant Benefits to U.S., Regional and Local Economies

The Liquefaction Project will further the national economic interest as recently articulated by the President in the State of the Union address on January 25, 2011 when he stated, "the more we export, the more jobs we create at home."⁵⁸ The Liquefaction Project will stimulate the local, regional, and national economies through job creation, increased economic activity and tax revenues. Much of the technology, equipment, and material needed to construct the Liquefaction Project can be obtained from U.S. sources. The manufacturing and supply of these required materials will result in an investment of over \$400 million per LNG train, which equates to over \$1.6 billion in U.S.-sourced materials for the Liquefaction Project as a whole. The Louisiana State and Gulf Coast regional economies will benefit from an immediate boost during the construction and operation of the Liquefaction Project. Moreover, the national economy will benefit indirectly from the Liquefaction Project's role in supporting the exploration and production ("E&P") chain for natural gas extraction.⁵⁹ This indirect stimulus will have a profound multiplier effect due to the wages, taxes and lease payments involved in the natural gas supply chain. Moreover, the Liquefaction Project will help to reduce barriers to trade

⁵⁸ See also National Export Initiative, *supra* note 6.

⁵⁹ Natural gas production activity is reported in over 30 U.S. states. See EIA, *Natural Gas Gross Withdrawals and Production*, *supra* note 11.

and promote U.S. businesses with the goal of increasing exports, thereby creating jobs and boosting the national economy.

Given the magnitude of the economic benefits associated with its construction and operation, the Liquefaction Project has received significant support from a broad spectrum of local, state and federal officeholders in the State of Louisiana, including the entire congressional delegation from the state.⁶⁰ The need for LNG export facilities in the United States, and in Louisiana in particular, has been recognized by U.S. Senator Mary Landrieu:

The United States is currently experiencing a natural gas revolution that will open up new markets here at home and abroad.... In northwest Louisiana alone, the Haynesville Shale reserve has 251 trillion cubic feet of recoverable natural gas, almost 11 times the amount consumed by Americans last year. Accessing this growing supply of natural gas and building the means to deliver it to consumers will stabilize prices and allow the U.S. to become a major exporter of natural gas. This project by Cheniere Energy at Sabine Pass is a key piece of that puzzle. The result will be more jobs for Louisianians, a stronger economy and more secure energy future of America.⁶¹

(1) Direct Benefits

The Liquefaction Project will provide a stable source of income and employment to the Louisiana and Gulf Coast communities, as noted by Louisiana Lieutenant Governor, Scott Angelle, in a July 21, 2010 letter filed in Docket No. PF10-24-000 on August 3, 2010. In this regard, approximately 3,000 jobs will be created or sustained directly through the design, engineering and construction of the Liquefaction Project, which translates into approximately \$1 billion in wages to U.S. workers over a six-year period.⁶²

⁶⁰ See joint letter of support filed by Louisiana Congressional delegation on July 26, 2010 in Docket No. PF10-24-000.

⁶¹ Press Release, U.S. Senator Mary Landrieu, Landrieu Welcomes Changes to Sabine Pass to Allow Exportation of Natural Gas (June 4, 2010), <http://landrieu.senate.gov/mediacenter/pressreleases/06-04-2010-2.cfm>.

⁶² Estimated construction work force numbers and payroll have been provided by Sabine Pass' engineering, procurement and construction contractor, Bechtel Corporation, and include current staff working on the Liquefaction Project for front end engineering and design.

Sabine Pass estimates that approximately 110 to 150 additional personnel will be required to maintain and operate the Liquefaction Project. Most of the construction workforce will come directly from southern Louisiana and southeastern Texas, providing a direct stimulus to those areas. The Liquefaction Project will provide a lifeline to the Gulf Coast area, particularly Cameron Parish, which was decimated by Hurricanes Ike and Rita and subsequently by the slowdown in offshore drilling activity following the Deepwater Horizon rig explosion. Once constructed and operational, the state and local economies will derive significant tax revenues from the Liquefaction Project, including tax revenues on NGLs, increased natural gas production, labor, pipelines, and other related infrastructure construction.

(2) Indirect Benefits

The Liquefaction Project will play an influential role in contributing to the growth of natural gas production in the U.S. The natural gas supply chain has very significant multiplier effects on the U.S. economy due to the large number of high-wage jobs paid directly by the natural gas industry, as well as royalty and lease payments made to landowners in association with natural gas production. The direct expenditures associated with the Liquefaction Project and indirect benefits made available by increased U.S. gas production and associated liquids will ripple through the U.S. economy and generate further economic activity as businesses and workers spend additional money. In this regard, there will be significant employment and income impacts on local businesses such as restaurants, service companies, retailers and hotels, while the additional U.S. natural gas productive capacity made available by LNG exports will generate benefits on a national scale. The Liquefaction Project also may spur the creation of new value-added businesses associated with the liquefaction and export processes.

The magnitude of economic activity that can be generated by the Liquefaction Project across multiple sectors is difficult to appreciate in the abstract. As a point of reference, a number

of economic impact studies have been conducted to assess the economic benefits of shale gas development in several basins, including the Barnett shale in Texas, the Haynesville shale in Louisiana, and the Marcellus shale in West Virginia and Pennsylvania, and are further discussed herein. Each of these studies analyzed the direct and indirect economic impact of natural gas development activity in these respective producing basins, and found that for every dollar spent directly by the gas industry, more than one dollar of indirect economic activity was generated as a consequence.⁶³

The impact on the State of Louisiana economy from Haynesville shale extraction has been significant. A 2008 survey of seven of the 17 firms drilling in the shale (which represent 72% of the leased acreage), shows that annual business sales increased by \$2.4 billion, household earnings increased by \$3.9 billion, tax revenues increased by \$153.3 million, and an additional 32,742 new jobs were created that year due to Haynesville shale development.⁶⁴ The volume of gas produced in 2008 from the Haynesville shale averaged 146 MMcf/d.⁶⁵

The Barnett shale also has been a major engine for growth in the North Texas region. Natural gas development in the Barnett shale region in 2008 resulted in: 111,131 permanent jobs, \$3.3 billion in retail sales, \$6.55 billion in personal income and \$11 billion in gross product, for

⁶³ See Nat'l Energy Tech. Laboratory ("NETL"), DOE, *Projecting the Economic Impact of Marcellus Shale Gas Development in West Virginia*, Mar. 31, 2010, at 23, <http://www.netl.doe.gov/energy-analyses/pubs/WVMarcellusEconomics3.pdf>.

⁶⁴ Loren C. Scott & Associates, *The Economic Impact of the Haynesville Shale on the Louisiana Economy in 2008*, Apr. 2009, at 21-22, <http://dnr.louisiana.gov/assets/docs/mineral/haynesvilleshale/loren-scott-impact2008.pdf>.

⁶⁵ See Lippman Consulting, *Monthly Major Shale Production Report*, updated Jan. 10, 2011, available by subscription at <http://www.lippmanconsulting.com>.

total annual expenditures of \$29.5 billion in North Texas.⁶⁶ The Barnett shale produced an average of 4.4 Bcf/d in 2008.⁶⁷

The economic impacts associated with drilling activity in the Marcellus shale have provided a significant boost to the Appalachian region in recent years. In 2009, Marcellus shale development created an estimated total value-added benefit of \$4.36 billion in West Virginia and Pennsylvania,⁶⁸ including approximately \$600 million in state and local taxes and 53,000 new regional jobs. In West Virginia, Marcellus shale development in 2009 yielded value-added benefits of approximately \$561 million to the state economy, including \$199 million in taxes and 4,858 additional jobs.⁶⁹ In Pennsylvania, value added to the state economy by Marcellus development was estimated at \$3.8 billion in 2009, consisting of more than \$400 million in state and local taxes, and employment in excess of 48,000 jobs.⁷⁰ The Marcellus shale produced an average of 244 MMcf/d in 2009.⁷¹

These surveys of economic impacts in emerging shale plays establish that E&P development has a significant multiplier effect which yields numerous benefits for state and regional economies. By promoting increased drilling activity, the Liquefaction Project will foster additional investments in U.S. gas-producing basins and thereby expand economic activity in the broader U.S. economy. These and other surveys suggest that, in the aggregate, the

⁶⁶ 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*, Mar. 2009, at 32, http://groundwork.iogcc.org/sites/default/files/2009_eco_report.pdf.

⁶⁷ See Lippman Consulting, *Monthly Major Shale Production Report*, updated Aug. 10, 2010, available by subscription at <http://www.lippmanconsulting.com>.

⁶⁸ Value added is defined as the sum of direct, indirect and induced economic impacts, minus intermediate capital and labor expenses.

⁶⁹ NETL, *Projecting the Economic Impact of Marcellus Shale Gas Development in West Virginia*, *supra* note 63, at 25.

⁷⁰ Timothy Considine, Ph.D., M.B.A., Robert Watson, Ph.D., P.E., Rebecca Entler & Jeffrey Sparks, The Penn. State Univ. Dep't of Energy & Mineral Eng'g, *An Emerging Giant: Prospects and Economic Impacts of Developing the Marcellus Shale Natural Gas Play*, July 24, 2009, at ii, <http://www.alleghenyconference.org/PDFs/PELMisc/PSUStudyMarcellusShale072409.pdf>.

⁷¹ Lippman Consulting, Inc., *Monthly Major Shale Production Report*, Aug. 10, 2010, available by subscription at <http://www.lippmanconsulting.com>.

Liquefaction Project will support additional employment of between 30,000 and 50,000 new U.S. jobs associated with natural gas upstream development.⁷²

G. International Considerations

U.S. international trade law and general U.S. trade policy advocate that the public interest is best served by the principles of free trade. Not only will the exportation of LNG following construction and operation of the Project have a beneficial impact on the U.S. trade deficit by leveling the balance of payments between the U.S. and the rest of the world, but it also will enhance the diversity of global supply and contribute to the security interests of the U.S. and its allies.⁷³ Furthermore, the exportation of LNG will advance initiatives underway by the current Administration to promote investment in energy infrastructure in neighboring Caribbean and Central/South America nations and displace environmentally damaging fuels in those countries.

(1) Balance of Payments

The exportation of LNG will have a beneficial impact for the United States on its balance of payments with the rest of the world, thereby reducing the overall U.S. trade deficit. According to the U.S. Department of Commerce, Bureau of Economic Analysis, in 2009 the total U.S. trade deficit was \$380.7 billion (comprised of approximately \$1.5 trillion in exports minus approximately \$1.9 trillion in imports).⁷⁴ Significantly, of that \$380.7 billion deficit, more than half (over \$204 billion) was the direct result of a negative balance of trade in petroleum products.⁷⁵ Given the substantial impact the United States' negative trade balance in petroleum

⁷² Calculations assume a *pro rata* share of employment created by 2 Bcf/d of additional U.S. production capacity. See Nick Snow, *Boost in Marcellus shale jobs, economy expected, study says*, Oil and Gas Journal, Aug. 2, 2010, pp 42-44. In the high development case, the Marcellus shale is forecast to produce 18 Bcf/d and 280,000 jobs, or 15,555 jobs per 1 Bcf/d of production. In the low development case, the Marcellus shale is forecast to produce 4 Bcf/d and 100,000 new jobs, or 25,000 jobs per 1 Bcf/d of production.

⁷³ See MIT Study, *supra* note 24, at xv.

⁷⁴ See BEA, U.S. Dep't of Commerce, *U.S. Int'l Trade in Goods and Services*, Feb. 10, 2010, at 11, <http://www.bea.gov/newsreleases/international/trade/2010/pdf/trad1209.pdf>.

⁷⁵ *Id.*

products has on its overall trade deficit and balance of payments, approving the Liquefaction Project and thus enabling the subsequent export of LNG, will have a significant positive impact in reducing that deficit.

More specifically, Sabine Pass estimates that the Project will enable the export of approximately \$5 billion of LNG on an annual basis. In addition, LNG exports will allow U.S. natural gas productive capacity to expand, thereby enabling additional production of NGLs such as ethane, propane and condensate derived in association with natural gas processing and field production. According to the ARI Liquids Report, LNG exports from the Gulf Coast will particularly benefit NGL production from several liquids-rich unconventional formations in the region, including the Barnett shale, the Eagle Ford shale and the Granite Wash tight sands. Furthermore, ARI found that an increase of 2 Bcf/d of LNG exports will yield an estimated 46.7 million barrels per year, or 128,000 b/d, of additional NGLs by 2020 due to increased productive capacity in the Gulf Coast region.⁷⁶ This incremental liquids production would be available either for export or to reduce current U.S. oil product imports, resulting in a further \$1.7 billion improvement to the U.S. balance of payments. The export of approximately 16 mtpa of LNG in tandem with displacement of 46.7 million barrels of annual oil product would therefore yield an approximate \$6.7 billion improvement to the U.S. balance of trade.⁷⁷ Notably, in 2009, the U.S. only exported a total of \$49 billion worth of petroleum products.⁷⁸ Accordingly, Sabine Pass estimates that approval of its request will result in a significant net benefit to the U.S. trade deficit and balance of payments over the period of the authorization.

⁷⁶ See Exhibit Z, ARI, *Domestic Hydrocarbon Liquids Production from Gas Shales and Other Unconventional Gas Resources*, August 27, 2010, at 6.

⁷⁷ See *id.* at 6.

⁷⁸ See BEA, *U.S. Int'l Trade*, *supra* note 74, at 11.

(2) Geopolitical Benefits

The Liquefaction Project will enable the export of domestically produced LNG which, in turn, will promote liberalization of the global gas market by fostering increased liquidity and trade at prices established by market forces. LNG exports also will advance national security interests as well as the security interests of U.S. allies through the diversification of global natural gas supplies. The current natural gas trade has developed regionally with three primary markets: North America, Europe and Asia. There is substantial trade within these markets, but limited trade between the markets. The pricing structure within each market is significantly different. In North America, natural gas is traded in a highly liquid and competitive market and prices are very transparent. The European and Asian markets are dominated by natural gas price linkage to the valuation of competing crude oil and petroleum products. LNG contracts for these markets also are predominantly indexed to crude oil. By introducing market-based price structures, the Project will increase the potential for global decoupling of oil-parity pricing. This will provide significant benefits worldwide because, as stated in the MIT Study, “[a]n interconnected delivery system combined with price competition are essential feature of a ‘liquid’ market.”⁷⁹ The Liquefaction Project can serve as a catalyst for this interconnection.

Natural gas is poised to grow as an energy source globally. Energy and security have historically been linked, and this relationship is likely to tighten. On April 8, 2010, in addressing the North Atlantic Treaty Organization (“NATO”), the President said lack of international energy security was a 21st century asymmetric threat for all to address.⁸⁰ He suggested that the European Union (“EU”) make a collective effort to address energy security concerns, and

⁷⁹ *MIT Study*, *supra* note 24, at 70.

⁸⁰ Press Release, The White House, Press Gaggle by Nat’l Security Advisor Gen. Jim Jones and NSC Chief of Staff Denis McDonough Aboard Air Force One (Apr. 9, 2010), <http://www.whitehouse.gov/the-press-office/press-gaggle-national-security-advisor-general-jim-jones-and-nsc-chief-staff-denis->.

reiterated that diversity in sources of energy supply was good for all parties. He also pledged cooperation and support with regard to that issue. The U.S. government and NATO have stressed that planning in response to terrorism is an area where energy security plays an integral role, while the U.S. government has expressed concerns over structural difficulties that inhibit a common position within the EU on energy security cooperation. Exports of U.S. natural gas would provide a catalyst that helps assure energy security among NATO members.

A global, liquid natural gas market is beneficial to U.S. economic interests, and, advances security interests through the diversity of supply and resilience to potential disruptions.⁸¹ To this end, the importance of the Liquefaction Project has been recognized by multiple European utilities with interest in it due to the competitive pricing structure of U.S. natural gas markets and the security and diversity of supply offered by liberalized market policies. The gas supply currently available to Europe is restricted to a small group of supplying countries. The amount of supply from the Liquefaction Project will represent an estimated 3% of the global LNG export capacity of 498 mtpa by 2015,⁸² and the entrance of the United States into the global LNG market as a supplier will significantly diversify the global gas market. To that end, exports of U.S. natural gas will play a significant role in reducing the influence of Eurasian/Middle Eastern price cartels on NATO allies and other U.S. trading partners. Further, the U.S. provides a stable trading partner for European utilities and other international customers. This has important security implications because “[t]he U.S., with its unique international security responsibilities,

⁸¹ *MIT Study*, *supra* note 24, at xv (“Greater international market liquidity would be beneficial to U.S. interests. U.S. prices for natural gas would be lower than under current regional markets, leading to more gas use in the U.S. Greater market liquidity would also contribute to security by enhancing diversity of global supply and resilience to supply disruptions for the U.S. and its allies. These factors moderate security concerns about import dependence.”). *See also id.* at xvii (“For reasons of both economy and global security, the U.S. should pursue policies that encourage an efficient integrated global gas market with transparency and diversity of supply, and governed by economic considerations.”).

⁸² Currently, the global LNG export capacity is 262 mtpa. By 2015, LNG Reports expects this to grow by 90%. *See* LNGReports, *World LNG Export and Import Markets to 2015* (Sept. 25, 2010), <http://www.lngreports.com/reports.php?reportid=309>.

can be constrained in pursuing collective action if its allies are limited by energy security vulnerabilities.”⁸³

H. The Project Will Have Minimal Environmental Impacts

The Liquefaction Project, which will be located within the previously authorized footprint of the existing SPLNG Terminal, will have minimal environmental impacts as briefly discussed below and fully demonstrated in the attached Environmental Report. The Liquefaction Project will involve converting an additional 191.2 acres of the leased SPLNG Terminal site for operation of four liquefaction trains. Construction also will involve re-disturbance of 64.77 acres of previously disturbed land within the SPLNG Terminal site. Additionally, dredging or filling of wetlands for construction and operation of the Project will result in permanent impact to 136.28 acres of wetlands associated with a former dredge material placement area on the SPLNG Terminal site. These impacts will be mitigated under the terms of the U.S. Army Corps of Engineers Section 404 permit and Louisiana Department of Natural Resources Coastal Use Permit.

No sensitive surface waters have been identified that will be impacted by construction or operation of the Liquefaction Project. The Project will require additional water use above the amounts already required for operation of the SPLNG Terminal. The additional water needed will come from the existing waterline supplied by the Johnson Bayou Water District. An additional redundant water line will be constructed to bring potable water from the City of Port Arthur. A description of this non-jurisdictional facility is included in Resource Report 1, Section 1.11 and Appendix 1D.

Sabine Pass will rely upon the federal oversight and regulations that govern ballast water discharge into U.S. waters to ensure that no impacts to fishery resources occur from the LNG

⁸³ *MIT Study, supra* note 24, at 71.

ships visiting the Liquefaction Project. Additionally, no impacts to threatened and endangered species are anticipated from construction and operation of the Project. In this regard, on November 19, 2010, the U.S. Fish and Wildlife Service filed a letter in Docket No. PF10-24-000 indicating that the proposed Liquefaction Project is not likely to adversely affect threatened and endangered species and therefore no further consultation is required absent significant changes in the scope or location of the Project. Finally, the Project will not adversely impact cultural resources as demonstrated in the attached Environmental Report.

In sum, and as fully discussed in the Environmental Report, the Liquefaction Project will produce significant benefits for the local, state and national economies with minimum impact to the environment.

VII PRESIDENTIAL PERMIT

The Project will not involve any facilities at the border of the United States and either Canada or Mexico, and will not otherwise involve any physical connection between the United States and a foreign country. Therefore, neither Section 153.15(a) of the Commission's regulations nor Executive Order 10485 requires Sabine Pass to apply for a Presidential Permit.⁸⁴

VIII DEPARTMENT OF ENERGY/OFFICE OF FOSSIL ENERGY

As required by Section 153.6 of the Commission's regulations, Sabine Pass states that Sabine Pass Liquefaction filed an application with the Department of Energy, Office of Fossil Energy ("DOE/FE") on August 11, 2010 in Docket No. 10-85-LNG for long-term, multi-contract authorization to engage in exports of up to 16 mtpa of LNG to any nation that currently has, or develops, the capacity to import LNG and with which the United States currently has, or in the future enters into, a Free Trade Agreement ("FTA") requiring the national treatment for trade in

⁸⁴ See *EcoElectrica, L.P.*, 75 FERC ¶ 61,157 at 61,158, n. 13 (1996).

natural gas and LNG. On September 7, 2010, DOE/FE granted Sabine Pass Liquefaction authorization to export domestically produced LNG to FTA Countries.⁸⁵ On September 7, 2010, Sabine Pass Liquefaction filed an application for long-term, multi-contract approval to export LNG to applicable countries not otherwise authorized pursuant to DOE/FE Order No. 2833. That application is currently pending.

IX OTHER RELATED APPLICATIONS

There are no other related applications that must be considered in conjunction with this Application other than as noted herein.

X REQUIRED EXHIBITS

Sabine Pass submits the following additional information as required by 18 C.F.R. § 153.8 in support of its request herein. To the extent any required exhibits have been omitted, Sabine Pass requests that the Commission treat the omitted material as inapplicable or otherwise unnecessary to disclose fully the nature and extent of the export operations proposed herein.

Exhibit A §153.8(a)(1)	A Certified Copy of the Certificate of Limited Partnership of Sabine Pass LNG, L.P. is included. Also attached is the Fifth Amended and Restated Agreement of Limited Partnership of Sabine Pass LNG, L.P. A Certified Copy of the Certificate of Formation of Sabine Pass Liquefaction, LLC is included. Also included is the Limited Liability Company Agreement of Sabine Pass Liquefaction, LLC.
Exhibit B §153.8(a)(2)	An explanation of financial and corporate relationships is included.
Exhibit C § 153.8(a)(3)	An Opinion of Counsel regarding authorized powers is included.
Exhibit D §153.8(a)(4)	Agreement for border interconnects. Omitted. Not

⁸⁵ *Sabine Pass Liquefaction, LLC*, FE Docket No. 10-85-LNG, Order No. 2833 (Sept. 7, 2010).

	Applicable.
Exhibit E §153.8(a)(5)	Evidence concerning the receipt of LNG; detailed engineering and design information. Please refer to Resource Report 13 in Exhibit F (Environmental Report) filed separately as part of this Application.
Exhibit E-1 §153.8(a)(6)	Report on earthquake hazards for LNG facilities. <i>See</i> the December 21, 2004 and June 15, 2006 Orders and underlying applications filed in Docket Nos. CP04-47-000 and CP05-396-000, respectively, for information regarding earthquake hazards for LNG facilities. <i>See also</i> Final Environmental Impact Statement prepared by the Commission Staff in Docket Nos. CP04-47-000, <i>et. al.</i> and the Environmental Assessment prepared by the Commission Staff in Docket No. CP05-396-000. Additional information specific to the Application is included in Resource Reports 6 and 13 in Exhibit F (Environmental Report) filed separately as part of this Application.
Exhibit F §153.8(a)(7)	Environmental Report. Filed separately herein as Exhibit F.
Exhibit G §153.8(a)(8)	A Geographic Map is included.
Exhibit H §153.8(a)(9)	List of Federal Authorizations is included.
Exhibit Z	<i>U.S. Natural Gas Resources and Productive Capacity</i> , prepared by Advanced Resources International, Inc. (Aug. 26, 2010) <i>Domestic Hydrocarbon Liquids Production from Gas Shales and Other Unconventional Gas Resources</i> , prepared by Advanced Resources International, Inc. (Aug. 27, 2010) <i>Market Analysis for Sabine Pass LNG Export Project</i> , prepared by Navigant Consulting, Inc. (Aug. 23, 2010)
Federal Register Notice	Form of notice suitable for publication in the <i>Federal Register</i> is attached.

XI
CONCLUSION

For the reasons discussed above, Sabine Pass respectfully requests that the Commission grant the instant Application for authorization to operate the SPLNG Terminal for the additional purpose of liquefying and exporting domestic natural gas as LNG. Moreover, Sabine Pass respectfully requests that such authorization be granted by September 2011.

Respectfully submitted,

/s/ Lisa M. Tonery
Lisa M. Tonery
Tania S. Perez
Attorneys for
Sabine Pass Liquefaction, LLC and
Sabine Pass LNG, L.P.

Dated: January 31, 2011

I, Patricia Outtrim, Vice President Government & Regulatory Affairs, hereby certify in accordance with 18 C.F.R. §385.2005(a): that I have read the above and foregoing Application and know its contents; that the contents of the Application are true and correct to the best of my knowledge, information, and belief; and that I possess full power and authority to sign the Application on behalf of Sabine Pass LNG, L.P. and Sabine Pass Liquefaction, LLC



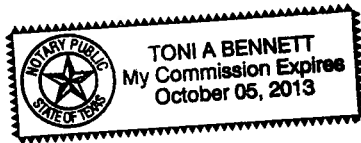
Patricia Outtrim, Vice President Government & Regulatory Affairs

State of Texas

County of Harris

BEFORE ME, the undersigned authority, on this day personally appeared Patricia Outtrim, known to me to be the person whose name is subscribed above and is Vice President of Cheniere Energy, Inc. and who acknowledged to me that he executed same for the purposes therein expressed.

SWORN TO AND SUBSCRIBED before me on the 28th day of January, 2011.



Name: Toni A. Bennett

Title: Notary Public