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Cc:	Tonery, Lisa
Subject:	2012 LNG Export Study - Comments of Cheniere Energy, Inc.
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Attachments:	DOE NERA Study Comments of Cheniere Energy, Inc.pdf

To DOE, Office of Fossil Energy:

Cheniere Energy, Inc. respectfully submits the attached letter to supplement DOE's understanding of critical issues raised in the NERA Study. Would you please confirm receipt of this filing.

All correspondence and communications concerning the letter, should be directed to the following persons:

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January 24, 2013

The Honorable Steven Chu
Secretary, Department of Energy
1000 Independence Avenue, S.W.
Washington, D.C. 20585

Re: 2012 LNG Export Study
Cheniere Marketing, LLC
FE Docket No. 12-97-LNG

Dear Secretary Chu:

On December 5, 2012, the U.S. Department of Energy ("DOE") released a study conducted by NERA Economic Consulting ("NERA Study"), which evaluated the macroeconomic impact of liquefied natural gas ("LNG") exports and invited comments that will help to inform and assist DOE as it conducts public interest determinations of fifteen pending export applications.[1] In connection therewith, Cheniere Energy, Inc. ("Cheniere") respectfully submits the following to supplement DOE's understanding of critical issues raised in the NERA Study.

Cheniere would like to first express its appreciation for the ambitious scope of work commissioned by DOE to evaluate the impacts associated with LNG exports in the United States. The development of export markets for domestic natural gas production is one of many benefits emerging from the increasing capacity to produce hydrocarbons in the United States from unconventional resources that has important ramifications on the future of America's economy, national security and foreign relations. To date, DOE has embraced its obligation to

[1] *Macroeconomic Impacts of LNG Exports from the United States*, NERA Economic Consulting (2012), available at http://www.fossil.energy.gov/programs/gasregulation/reports/nera_lng_report.pdf [hereinafter NERA Study].

evaluate and assess the public interest with a focus and seriousness germane to the importance of LNG exportation, including concrete steps taken by the agency to expand awareness and understanding of these important issues for both policymakers and the general public. DOE deserves praise for a commendable job performed to date in this endeavor.

The NERA Study provides robust analysis and detailed modeling of the future economic impacts of LNG exports, and reaches several conclusions that we endorse. Specifically, NERA finds that, under all scenarios considered, the United States will benefit economically from the international sale of LNG,[2] that "U.S. economic welfare consistently increases as the volume of natural gas exports increased,"[3] and that the trade of LNG ultimately could generate up to $47 billion of additional economic activity in the U.S.[4] These findings are consistent with the benefits gained from the international trade of other goods that can be competitively produced by American industry. Cheniere believes that natural gas is no different. By concluding that the benefits of allowing exports are overwhelmingly positive for the U.S. economy, the NERA Study aptly highlights "the outcome that economic theory describes when barriers to trade are removed."[5]

However, while the general conclusions reached by the NERA Study are accurate, Cheniere submits to DOE that several of the assumptions used in the NERA Study provide an incomplete accounting of the impacts associated with LNG exports, and serve to understate the potential benefits to the U.S. economy that will result from expanded future international trade of natural gas. These assumptions are discussed below and, when taken into consideration with the

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[2] *See generally id.*

[3] *Id.* at 6.

[4] *Id.* at 77.

[5] *Id.* at 1.

conclusions of the NERA study, demonstrate that the potential macroeconomic benefits for the U.S. economy are greater than estimated by NERA.

A. Use of Outdated Forecasts for Model Calibration

The NERA Study is calibrated based on the assumptions used by the U.S. Energy Information Administration ("EIA") in its *Annual Energy Outlook 2011* ("AEO 2011")[6] for all modeling scenarios, including those for future domestic natural gas recovery costs, delivered prices and resource availability. The use of the prior year's *Annual Energy Outlook* is understandable given the breadth of analysis undertaken in the NERA Study, which was conducted during the year 2012. Notably, however, the most recent information released by the EIA in its *Annual Energy Outlook 2013 Preliminary Release* ("AEO 2013")[7] provides even greater support for the trends identified in the NERA Study, and indicates a more favorable outlook for supply and prices that support not only exports but also additional domestic demand. Namely, the AEO 2013 forecasts that greater volumes of domestic natural gas supplies will be available to consumers at lower prices than identified by the AEO 2011.[8] By 2035, domestic gas production is projected to be 5.0 Tcf, or 18.5% greater than the quantity estimated in AEO 2011, while average wellhead prices between the years 2015 and 2035 are estimated to be approximately $1.00, or 17.3% lower than the values incorporated in the NERA Study.[9]

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[6] U.S. Energy Information Administration, *Annual Energy Outlook 2011 (April 26, 2011),* available at http://www.eia.gov/forecasts/archive/aeo11/index.cfm [hereinafter AEO 2011].

[7] U.S. Energy Information Administration, *Annual Energy Outlook 2013 Early Release* (Dec. 5, 2012), available at http://www.eia.gov/forecasts/aeo/er/pdf/0383er(2013).pdf [hereinafter AEO 2013].

[8] AEO 2011 *Reference Case Table 13. Natural Gas Supply, Disposition and Prices (April 26, 2011)*, available at http://www.eia.gov/forecasts/archive/aeo11/data.cfm?filter=natural_gas#natural_gas.

[9] *Id.*

The NERA Study also identifies the negative impact of higher prices at the margin for certain groups of consumers, yet these predictions for higher prices are derived from outdated EIA models of the availability and recovery costs for domestic natural gas resources. The revisions contained in EIA's long-term outlook make clear that larger volumes of natural gas have been identified and are available to meet consumer demand at lower prices than previously forecasted. It stands to reason that the impact of price fluctuations associated with LNG exports or any other form of market expansion would be lower than suggested by NERA. Moreover, the purported harm to certain end-users resulting from higher prices would likely be mitigated if NERA were to recalibrate its models based on the updated EIA projections.

DOE should also consider the broader conclusions of the AEO 2013, with a focus on those findings that are relevant to projected quantities of both natural gas supply and demand in the U.S. Specifically, the EIA's latest forecast predicts that: domestic natural gas production will grow at nearly twice the rate as natural gas demand through 2035;[10] domestic supply will exceed consumption by 2020, resulting in the U.S. becoming a net exporter of natural gas;[11] and expansions in domestic and international markets are achievable at lower prices than previously estimated.[12] Outlooks from the EIA and industry experts will continue to evolve over time as institutional knowledge of the U.S. unconventional resource base grows and new technologies are applied that reduce exploration and recovery costs. But the trend, supported by the latest data in the AEO 2013 forecast, lends support to the conclusion that the U.S. natural gas resource base

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[10] AEO 2013, *supra* note 7 at 2.

[11] *Id.* at 1.

[12] *Id.*

is growing, recovery costs for available resources are falling, and that recoverable resources are more than sufficient to meet future domestic needs as well as international expansions.

B. Assumption of Full Employment

The NERA Study concludes that there will not be any net job growth associated with LNG exports; however, it also assumes "full employment within the U.S. economy" over the entire forecast period considered in the analysis.[13] This assumption casts doubt on whether it would even be possible for the NERA Study to accurately demonstrate domestic job benefits resulting from LNG exports if, presumably, there are no surplus labor resources available to employ in the future. The U.S. economy has been operating far below full employment levels for a number of years. There are no assurances that the U.S. economy will return to full employment anytime soon, and future domestic or international events have the potential to negatively impact the U.S. economy and create additional headwinds to full employment. Furthermore, the evidence is overwhelming that development of unconventional natural gas resources has generated significant employment benefits across a number of domestic industries in recent years resulting from direct, indirect and induced economic market impacts. DOE's decisions with regard to pending applications for authorization to export LNG will send important market signals that will influence capital investment decisions in the near term, and in turn impact near-term job creation during a time when under-employment is pervasive in the U.S. economy. Thus, DOE should consider that the full employment assumption used in the NERA Study understates the employment benefits that will accrue from future LNG exports.

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[13] *See* NERA Study, *supra* note 1 at 103.

C. NERA's Consideration of Treated versus Wellhead Natural Gas Production

The NERA Study evaluates only the economic implications of LNG exports on the supply and market price of pipeline-treated 'dry' natural gas.[14] This assumption does not capture the full range of value-added products that result from natural gas development.[15] The lifting and processing of wellhead natural gas frequently yields additional hydrocarbon products, including condensates, pentanes, and natural gas liquids ("NGLs") such as ethane, propane, butane, and natural gasoline, among others, which are recovered during natural gas treatment and processing. These co-products provide additional value and benefit to both producers of natural gas and a wide range of residential,[16] commercial[17] and industrial[18] users.

While the NERA Study concludes that certain manufacturing sectors would be negatively impacted at the margin by higher prices resulting from LNG exports, it fails to consider the

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[14] Every scenario presented in the NERA Study presents 21.1 Tcf as the baseline Reference Case for domestic natural gas production in 2010. This approximates, and is less than, the 21.28 Tcf of "Dry Gas Production" presented for 2010 in the AEO 2011. *See* NERA Study, *supra* note 1 at 115-77; *also see* AEO 2011, *supra* note 6 at *Table 13 Natural Gas Supply, Disposition, and Prices, Reference Case*, available at http://www.eia.gov/oiaf/aeo/tablebrowser/#release=AEO2011&subject=0-AEO2011&table=13-AEO2011&region=0-0&cases=ref2011-d020911a.

[15] A more accurate measure of the additional hydrocarbon quantities associated with natural gas development would be to consider "Marketed Gas Production". Marketed Gas Production in 2010 totaled 22.38 Tcf, 5.0% greater than 21.32 Tcf in Dry Gas Production in 2010. *See* U.S. Energy Information Administration, *Natural Gas Gross Withdrawals and Production* (January 18, 2013), available at http://www.eia.gov/dnav/ng/ng_prod_sum_dcu_NUS_a.htm

[16] Propane is used by 43.9 million U.S. households, including 8.0 million mainly rural households for space heating during the winter. *See* U.S. Energy Information Administration. *2009 Residential Energy Consumption Survey, Table HC1.1Fuels Used & End Uses by Type of Housing Unit,* available at http://www.eia.gov/consumption/residential/data/2009/#undefined

[17] Propane is used for space and water heating, cooking, cooling and manufacturing in commercial buildings in the U.S. totaling approximately 7.176 billion square feet of floor space. *See* U.S. Energy Information Administration, *2003 Commercial Building Energy Consumption Survey, Table B25 Energy End Uses, Floorspace for Non-Mall Buildings, 2003,* available at http://www.eia.gov/emeu/cbecs/cbecs2003/detailed_tables_2003/2003set6/2003pdf/b25.pdf.

[18] There are approximately 54,000 domestic manufacturers that use NGLs as a feedstock or processing fuel source. *See* U.S. Energy Information Administration, *Manufacturing Energy Consumption Survey 2006, Table 3.4 Number of Establishments by Fuel Source,* available at http://www.eia.gov/emeu/mecs/mecs2006/pdf/Table3_4.pdf

consequences of LNG exports on the market supply and market price of these associated NGLs and petroleum products. The creation of additional markets for natural gas through LNG exports will spur expanded investments in upstream natural gas development, which in turn will lead to the additional production of associated NGL and petroleum products recovered from wellhead gas. Record levels of natural gas production are resulting in record production of NGLs,[19] and historically low prices for several associated NGL products.[20] The increased availability of these co-products that result from LNG exports will benefit existing users through lower prices, as well as provide opportunities to expand future economic activities that benefit additional stakeholders in the domestic economy. The petrochemicals industry, for example, is considering major expansions in the U.S. based on expectations for abundant future supplies of ethane, which provides the critical feedstock for the production of ethylene to make plastics. LNG exports will expand upstream investments and thereby improve the security of future supply for ethane, which will directly benefit these consumers. These same benefits will result for consumers that rely upon the availability of other NGLs and hydrocarbon co-products derived from wellhead natural gas production. Unfortunately, the NERA Study fails to capture these additional benefits for consumers and producers of NGLs in its analysis. DOE can broaden its understanding and strengthen its consideration of the NERA analysis by accounting for these benefits.

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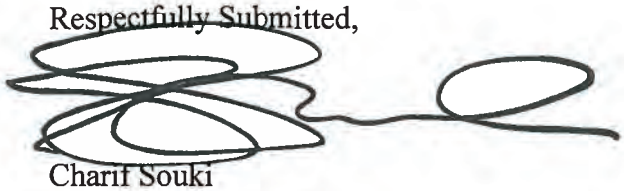
[19] The U.S. produced 2.485 million barrels per day of NGLs in October 2012, the highest in U.S. historical data through 1973. *See* U.S. Energy Information Administration. *U.S. Gas Plant Production of Natural Gas Liquids and Liquid Refinery Gas,* available at http://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=MNGFPUS2&f=M

[20] See Eunice Bridges, Widespread US ethane rejection expected in 2013, limited by BTU specs, Platts (January 4, 2013).

D. Conclusion and Recommendation

Cheniere greatly appreciates DOE's efforts to identify and consider the full range of market impacts associated with LNG exports. We support the conclusions reached in the NERA Study regarding the economic impacts associated with LNG exports, and respectfully request that DOE also consider the issues raised herein, as well as the larger body of information recently developed by EIA and other industry experts which supports the conclusion that the beneficial trends outlined in the NERA Study are in fact accelerating. In light of these benefits, DOE should expeditiously and without limitation authorize the applications to export LNG to non-FTA countries that are pending before the agency.

Respectfully Submitted,



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