February 12, 2016

U.S. Department of Energy (FE–34)
Office of Natural Gas Regulatory Activities
Office of Fossil Energy
Forrestal Building, Room 3E-042
Independence Ave SW,Washington, DC 20585

Dear Secretary Moniz:

Thank you and the Department of Energy's Office of Fossil Energy ("DOE/ FE") for accepting these comments on two updated studies on the impacts of LNG exports: the "2014 EIA LNG Export Study" and the "2015 LNG Export Study."

These studies supplement EIA's January 2012 report titled "Effect of Increased Natural Gas Exports on Domestic Energy Markets"[1] and the NERA Economic Consulting Report titled "Macroeconomic Impacts of LNG exports from the United States."[2] Sierra Club, together with numerous other groups, submitted comments identifying extensive flaws with the NERA analysis.[3]

The two new studies do not cure, and in some ways compound, the flaws in these prior analyses. Accordingly, Sierra Club reiterates the previous concerns, and incorporates these previous comments by reference.

Ultimately, in considering proposed LNG exports, DOE must determine whether gas exports are "consistent with the public interest," 15 U.S.C. § 717b(a), and take a hard look at the environmental impacts of such exports, 42 U.S.C. § 4332. The 2014 and 2015 studies, like the prior economic studies, consider only a small part of this problem. Because these studies do not address the environmental or distributional effects of exports, they do not provide an adequate basis for DOE to determine that exports are consistent with the public interest.

[1] http://energy.gov/sites/prod/files/2013/04/f0/fe_eia_lng.pdf
[2] http://energy.gov/sites/prod/files/2013/04/f0/nera_lng_report.pdf
[3] *See* http://www.fossil.energy.gov/programs/gasregulation/authorizations/export_study/Sierra_Club01_24_13.pdf and http://www.fossil.energy.gov/programs/gasregulation/authorizations/export_study/reply_comments/Sierra_Club02_25_13.pdf.

I. The 2014 and 2015 Export Studies Are Too Narrow In Scope, Insofar As They Do Not Address The Impacts of Less than 12 bcf/d of Exports

The 2014 and 2015 export studies consider the effects of increasing U.S. LNG exports to levels between 12 and 20 billion cubic feet per day (bcf/ d). DOE, however, still faces the question of whether to allow even 12 bcf/ d of exports. DOE has issued final approval for only 5.788 billion cubic feet per day of exports to non-free trade agreement countries—0.4 of which are the subject of a current legal challenge.[4] An additional 4.25 bcf/ d of exports were approved by DOE more than six months after the 2014 EIA LNG Export Study was released,[5] but DOE has preliminarily granted Sierra Club's requests for rehearing of these approvals pending further DOE deliberation.

DOE must consider the cumulative impacts of foreseeable export projects, and as such, Sierra Club agrees that analysis of higher export volumes is necessary, even when considering applications that bring the total level of authorized exports to lower levels. That is, DOE cannot postpone analysis of the effects of the last 2 bcf/ d of exports until DOE's evaluation of the application for that final increment. However, DOE also cannot treat lower levels of exports as inevitable or part of the baseline. The 2014 and 2015 Export Studies present a misleading picture by failing to address the impacts of LNG exports as a whole, or even the impacts of exports still pending DOE review. Rather than merely comparing the effects of 20 bcf/ d of exports with the effects of 12 bcf/ d of exports, for example, DOE must compare the effects of various levels of exports with baselines in which DOE did not approve any further export applications, or in which DOE had not approved exports in the first place.

Although the 2012 EIA and NERA studies considered lower export volumes (5.5 and 10.9 bcf/ d of exports, representing 6 and 12 bcf/ d of export-related gas demand), those studies relied on assumptions regarding gas and oil prices, electricity demand, and operative regulations that do not reflect current conditions. Once DOE had determined that additional analysis was necessary, DOE should have revisited these earlier studies, rather than merely looking at the marginal effects of higher export volumes.

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[4] *See* http://energy.gov/sites/prod/files/2015/12/f27/Summary%20of%20LNG%20Export%20Applications.pdf. DOE's approval of 0.4 bcf/d of exports from the Freeport, Texas facility is the subject of litigation currently pending in the D.C. Circuit.

[5] DOE/FE Order Nos. 3331-A, 3638, and 3669).

II. The 2015 Export Study Indicates that Exports Will Have Important Distributional Effects, but Fails to Investigate These Effects

The 2015 LNG Export Study concludes that increasing exports to levels between 12 and 20 billion cubic feet per day (bcf/ d) will create a miniscule increase in gross domestic product (GDP), but this small net change masks much larger, and opposing, distributional effects. 2015 LNG Export Study at 15, Figure ES3. The 2015 Study indicates that in the reference case, going from 12 to 20 bcf/ d will increase GDP by $3.8 billion, or 0.02%. *Id.* at C-1. However, gas consumers will suffer a loss of roughly seven times this amount (0.15% of GDP, or roughly $26 billion) as a result of increased gas prices.

As Sierra Club explained in comments on the NERA study,[6] most Americans will suffer the downside of increased gas prices without sharing in the benefits of exports. Simply moving money from gas consumers—including households that rely on gas for heat and cooking, or who will face higher electric bills because of increased—to gas producers is not an effect that furthers the public interest. The 2015 LNG Export Study does not address the effects of this transfer on ordinary households.

III. The 2015 Export Study, Like the NERA Study, Appears to Assume Without Support that All Profits from Increased Gas Production and Exports Will Go to American Companies

Nor does the 2015 Export Study provide a basis for concluding that, to the extent that exports increase profits in the gas production industry, these profits will benefit the American public. As Sierra Club explained in reply comments on the NERA Study:

> Sierra Club's initial comment demonstrated extensive foreign investment in U.S. liquefaction capacity. [citing pages 9-10 of exhibit 5 thereto] Japan's Osaka Gas and Chubu Electric utilities provide additional evidence on this point, expressing their belief that foreign investors (presumably including these companies) will make significant additional investments in U.S. liquefaction facilities. A result of these investments will be that, contrary to the NERA Study's assumptions, a share of the profits realized by liquefaction operators will accrue to foreign investors. Moreover, while Sierra Club's initial comment only discussed foreign ownership in the context of liquefaction and terminal facilities, other commenters

[6] http://www.fossil.energy.gov/programs/gasregulation/authorizations/export_study/Sierra_Club01_24_13.pdf at 6-22, *see also* Exhibit 5 thereto, http://www.fossil.energy.gov/programs/gasregulation/authorizations/export_study/Exhibits_1-20.pdf

> demonstrate that foreign entities are also investing directly in natural gas production. India's GMR Energy Limited notes that Indian companies have already taken stakes in production of Marcellus and Eagle Ford Shales. Foreign investment rebuts the NERA Study's assumption that profits from gas production will accrue solely to U.S. consumers.

Sierra Club NERA Reply comments at 15 (internal footnotes omitted).[7]

IV. The 2014 and 2015 Studies Do Not Account for the Environmental Impacts of LNG Exports, or the Economic Impact Thereof

As DOE is well aware, every stage of the LNG lifecycle has important environmental impacts. These impacts must be addressed, directly, in determining whether any particular export application is consistent with the public interest. To date, DOE has failed to adequately do so. These impacts also have important economic impacts, which DOE must acknowledge.

Again, Sierra Club reiterates its prior comments on this issue. Here, we note that although the 2014 and 2015 export studies entirely fail to address environmental impacts, both studies provide still further indication that these impacts will occur, and that DOE has the tools necessary to conduct an additional analysis thereof. We illustrate two such impacts here.

A. The 2014 EIA LNG Export Study Indicates That Increasing Exports Causes Increased Domestic Coal Use in All Export Scenarios, but Fails to Address Environmental Impact of This Switch

The 2014 EIA LNG Export Study predicts that increasing natural gas exports will decrease domestic gas consumption in addition to increasing domestic gas production, and that this demand shift will occur primarily in the electric sector. 2014 EIA LNG Export Study at 5, Table B5. Specifically, the study predicts that exports will cause some electricity generators to shift from gas to coal. *Id.* The study predicted that such a shift will occur even if federal regulations were adopted to limit coal use, based on EIA's "accelerated coal retirement" scenario. *Id.* The 2015 Export Study also concluded that domestic natural gas consumption would decrease in almost all cases considered. *See* 2015 LNG Export Study at C-1.

As Sierra Club has repeatedly explained, and as EIA, EPA, and other federal agencies have recognized, any such shift from gas to coal has significant environmental consequences. EIA's 2012 export study provided quantitative

[7] http://www.fossil.energy.gov/programs/gasregulation/authorizations/export_study/reply_comments/Sierra_Club02_25_13.pdf

estimates of some of these consequences, modeling changes in greenhouse gas emissions from domestic combustion (but not production) across scenarios. EIA 2012 Export Study at 19, Table 2.[8] The 2014 and 2015 studies, however, do not even provide this analysis.

B. The 2015 LNG Export Study Indicates that U.S. LNG Exports Will Not Simply Displace Other Fossil Fuels

U.S. LNG does not simply compete in the market with coal, other sources of natural gas, or other fossil fuels. Instead, an ever-growing body of evidence indicates that potential LNG importers increasingly have the option of meeting energy needs with renewable energy such as solar and wind. *See, e.g.,* Jurgen Weiss, et al., *LNG and Renewable Power: Risk and Opportunity in a Changing World* (Jan 15, 2016).[9]

It appears that the 2015 LNG Export Study does not directly address the extent to which U.S. LNG exports will compete with renewables in end-use markets. The 2015 Study "incorporate[s] announced policy dictating various forms of energy—such as nuclear, renewables, and hydro—and allow an econometric fit of the residual component shares (all of which are fossil fuels) to determine the mix of crude oil, natural gas, and coal in TPER by sector." 2015 Export Study at B-6. However, as the *LNG and Renewable Power* report illustrates, such competition is certain to occur regardless of whether it was included in this model.

Although the material provided by the study does not clearly explain how the role of renewables was modeled, the study indicates that U.S. LNG exports will not simply displace other fossil fuels. The 2015 Study's high international demand cases assume that potential importers will adopt policies limiting the use of coal. *Id.* at 55-56. This suggests that in these cases U.S. LNG exports will not displace coal, because coal use diminishes as a result of top-down policy decisions rather than market forces or the availability of U.S. exports. On the other hand, the study indicates that U.S. LNG does not displace gas in these scenarios either, "the addition of incremental U.S. LNG exports displaces very little supply from the rest of the world." *Id.* 64-65. Thus, the 2015 Study indicates that U.S. LNG exports must either displace renewables or facilitate an increase in overall energy consumption. Although further analysis is plainly required of this issue, the 2015 study indicates that DOE cannot simply assume that U.S. LNG exports will displace coal or gas.

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[8] http://energy.gov/sites/prod/files/2013/04/f0/fe_eia_lng.pdf

[9] http://www.brattle.com/system/publications/pdfs/000/005/249/original/LNG_and_Renewable_Power_-_Risk_and_Opportunity_in_a_Changing_World.pdf

V. Conclusion

Although we agree with DOE that the prior export studies do not reflect presently-proposed export volumes or market conditions, and that updates were therefore required, the 2014 and 2015 export studies continue to present a misleadingly complete picture of the consequences of LNG exports. DOE must consider both the distributional and equitable economic effects of exports, as well as the environmental effects (both monetizable and otherwise). Absent such analysis, DOE' cannot conclude that exports are consistent with the public interest.

Sincerely,

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