From:	David Rosner
To:	LNGStudy
Cc:	Tracy Terry; Margot Anderson
Subject:	2012 LNG Export Study
Date:	Thursday, January 24, 2013 4:18:31 PM
Attachments:	Bipartisan Policy Center Comment on 2012 LNG Export Study.pdf

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To Whom It May Concern,

Attached please find comments submitted on behalf of the Bipartisan Policy Center in regards to the 2012 LNG Export Study.

Best,

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January 24, 2013

VIA ELECTRONIC MAIL

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

RE: "2012 LNG Export Study"

Dear Secretary Chu,

The Bipartisan Policy Center respectfully submits these comments in response to the U.S. Department of Energy's (DOE) Office of Fossil Energy request for comments on the "2012 LNG Export Study." The request for comments was set forth in the December 11, 2012 *Federal Register* notice appearing at 77 Fed. Reg. 2012-29894.

Statement of Interest

Founded in 2007 by former Senate Majority Leaders Howard Baker, Tom Daschle, Bob Dole and George Mitchell, the Bipartisan Policy Center (BPC) is a non-profit organization that drives principled solutions through rigorous analysis, reasoned negotiation and respectful dialogue. With projects in multiple issue areas, BPC combines politically balanced policymaking with strong, proactive advocacy and outreach.

Through its New Dynamics of Natural Gas Supply and Demand project, the BPC is focused on the dynamics of new gas supplies, and has assessed their impact on the energy system as a whole, and explored opportunities to expand natural gas use in ways that improve the economic and environmental performance of our energy system.

Comments

The "2012 LNG Export Study" Findings Are Consistent with Existing Analyses of the Economic Impacts of LNG Exports

A number of studies over the past few years have examined the impact of LNG exports on domestic natural gas prices. A recent report by the Brookings Energy Security Initiative provides a detailed review

of these studies,[1] which found that the impact of LNG exports on natural gas prices ranges from a 2 percent to 11 percent increase compared to a baseline scenario which includes no LNG exports.[2]

In June 2012, Michael Levi of the Council on Foreign Relations released a wide-ranging discussion paper titled *A Strategy for Natural Gas Exports*.[3] His review provides a qualitative assessment of the potential benefits and costs of LNG exports that includes macroeconomic and distributional effects, climate change and local environmental impacts, and foreign policy consequences. With respect to the effect of LNG exports on domestic natural gas prices, he states:

> [T]o the extent that allowing exports leads to potentially worrisome rises in domestic natural gas prices, exports are likely to be self-limiting....Strong increases in domestic prices will make exports less attractive overseas. Large export volumes would most likely close off additional exports before U.S. prices could rise too far.[4]

On balance, Levi concludes that the benefits of LNG exports outweigh the costs "assuming that proper steps are taken to protect the environment", and recommends that DOE should approve the export permit applications, noting that the government "should not encourage exports *per se*; it should simply allow them to occur if properly regulated markets steer the economy in that direction."[5] The Brookings report comes to a similar conclusion and states, "The study recommends that U.S. policy makers should refrain from introducing legislation or regulations that would either promote or limit additional exports of LNG from the United States."[6]

Similarly, a study by Dr. Kenneth Medlock III, of Rice University's James A. Baker III Institute for Public Policy, was unique in that it allowed for the price and trade interactions between the domestic and international market for LNG. The Medlock study concluded that "…domestic market interactions with the market abroad will determine export volumes and therefore U.S. domestic prices," and that "…LNG exports will not likely produce a large domestic price impact"[7]

The "2012 LNG Export Study" Findings Are Consistent with BPC's Analysis of the Economic Impacts of LNG Exports

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[1] Ebinger, C., K. Massy, G. Avasarala. *Liquid Markets: Assessing the Case for U.S. Exports of Natural Gas.* Brookings Energy Security Initiative. May 2012 Policy Brief 12-01. The study assessed recent economic analyses by the Energy Information Administration, Deloitte, ICF International, as well as two separate studies by Navigant Consulting.

[2] This range does not reflect the full range of price impacts found in the economic studies reviewed by Brookings. In particular, some scenarios modeled by the Energy Information Administration were not included in the Brookings summary of price impacts because the authors felt the level and pace of growth in LNG exports were not realistic. The Energy Information Administration itself included several caveats in its own analysis regarding the results of some of these scenarios.

[3] Levi, Michael, "A Strategy for U.S. Natural Gas Exports," Discussion Paper 2012-04, June 2012. http://www.brookings.edu/~/media/research/files/papers/2012/6/13%20exports%20levi/06_exports_levi

[4] Ibid, p. 26

[5] Ibid, p. 6.

[6] Ebinger, C., Massy, K., and Avasarala, G. "Liquid Markets: Assessing the Case for U.S. Exports of Liquefied Natural Gas," Brookings Energy Security Initiative Policy Brief 12-01, May 2012,P. VI. http://www.brookings.edu/~/media/research/files/reports/2012/5/02%20lng%20exports%20ebinger/0502_lng_exports_ebinger.pdf

[7] Medlock, Kenneth, "U.S. LNG Exports: Truth and Consequence," James A. Baker III Institute for Public Policy, Rice University, August 10, 2012, P. 5. http://bakerinstitute.org/publications/US%20LNG%20Exports%20-%20Truth%20and%20Consequence%20Final_Aug12-1.pdf

The Bipartisan Policy Center has an ongoing modeling analysis to assess the economic impacts of a variety of natural gas market factors, including the potential impacts of U.S. exports of LNG. To analyze the impacts of LNG exports, the Bipartisan Policy Center used the National Energy Modeling System (NEMS), a detailed model of energy production and consumptions used by the U.S. Energy Information Administration (EIA) to develop forecasts and assess policy options.[8]

The BPC's modeling effort is robust in that it considers LNG exports within an international trade framework, rather than a framework that only considers the domestic price impacts of a series of static assumptions on LNG export volumes. Specifically, the BPC modified the NEMS model framework so that the level of exports is determined endogenously (i.e., within the model itself) in order to take into account the effects on both domestic natural gas prices and demand in importing markets, and to provide feedback from international trade in LNG back to the domestic market for natural gas. In effect, the model will adjust the level of LNG exports as domestic natural gas prices rise and fall. In addition, the BPC introduced assumptions on transportation costs and recovery of capital used to build export facilities.

We believe that these modifications have enabled us to draw conclusions on the impact of LNG exports that are more robust because they consider the full suite of relevant feedback, and thus, are more reliable.

The initial results of the BPC's NEMS (BPC-NEMS) analysis are consistent with the findings in the literature as well as with the NERA report titled "Macroeconomic Impacts of LNG Exports from the United States." The key findings of the initial BPC analysis are:

1. Domestic natural gas price levels are the primary driver of U.S. LNG exports.

Decisions by entities to export U.S. LNG will be made in an international framework that takes into account the U.S. natural gas price, transportation, liquefaction facility capital costs, and the price and demand in target foreign markets. The fundamental driver in this equation is the U.S. price of natural gas.

2. U.S. LNG exports are unlikely to result in large price impacts in the domestic market.

The initial results of the BPC analysis show that LNG exports are likely to have only modest impacts on domestic natural gas prices—and that LNG export levels will adjust as domestic prices rise or fall.

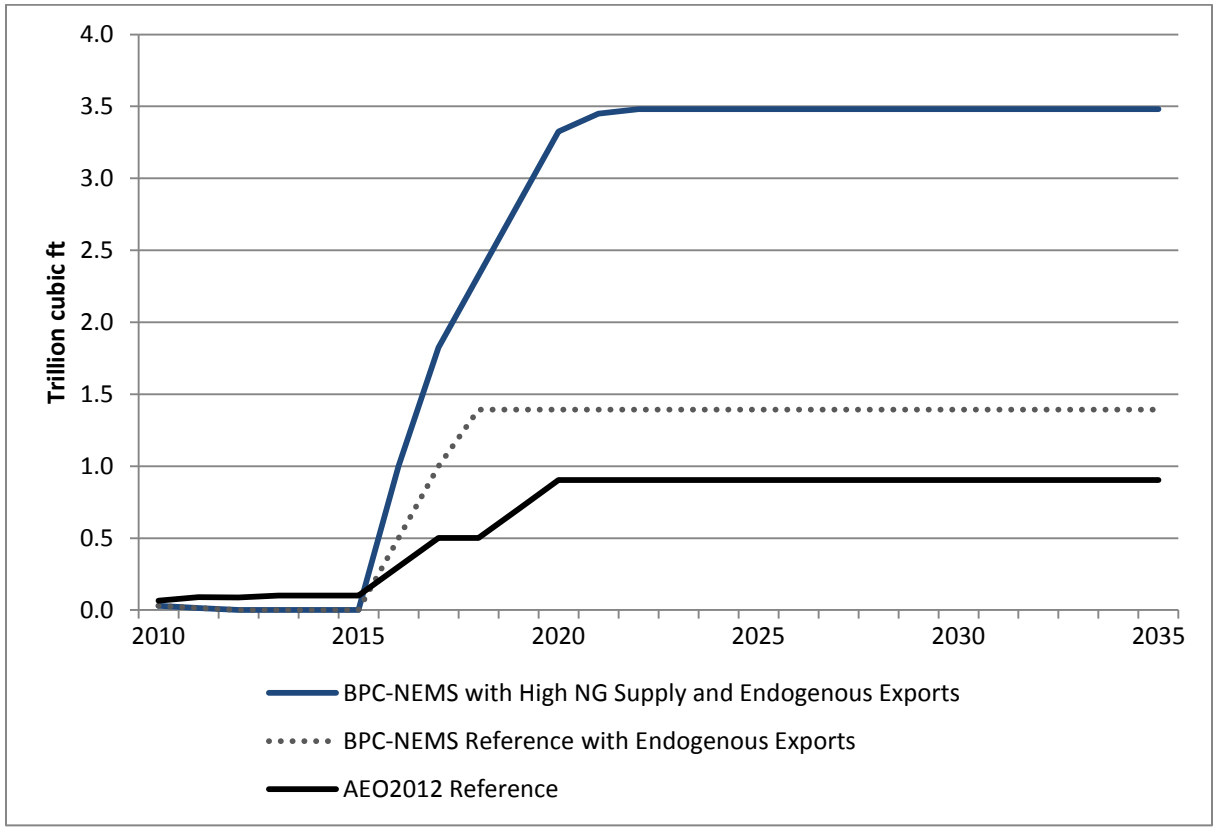
Details of the BPC's Initial Modeling Analysis

Figure 1 shows the projected volume of LNG exports under three scenarios: The Reference Case of the EIA's Annual Energy Outlook 2012 (AEO2012 Reference Case); the BPC-NEMS case, which is based on

[8] A detailed overview of the NEMS model can be found at http://www.eia.gov/oiaf/aeo/overview/index.html.

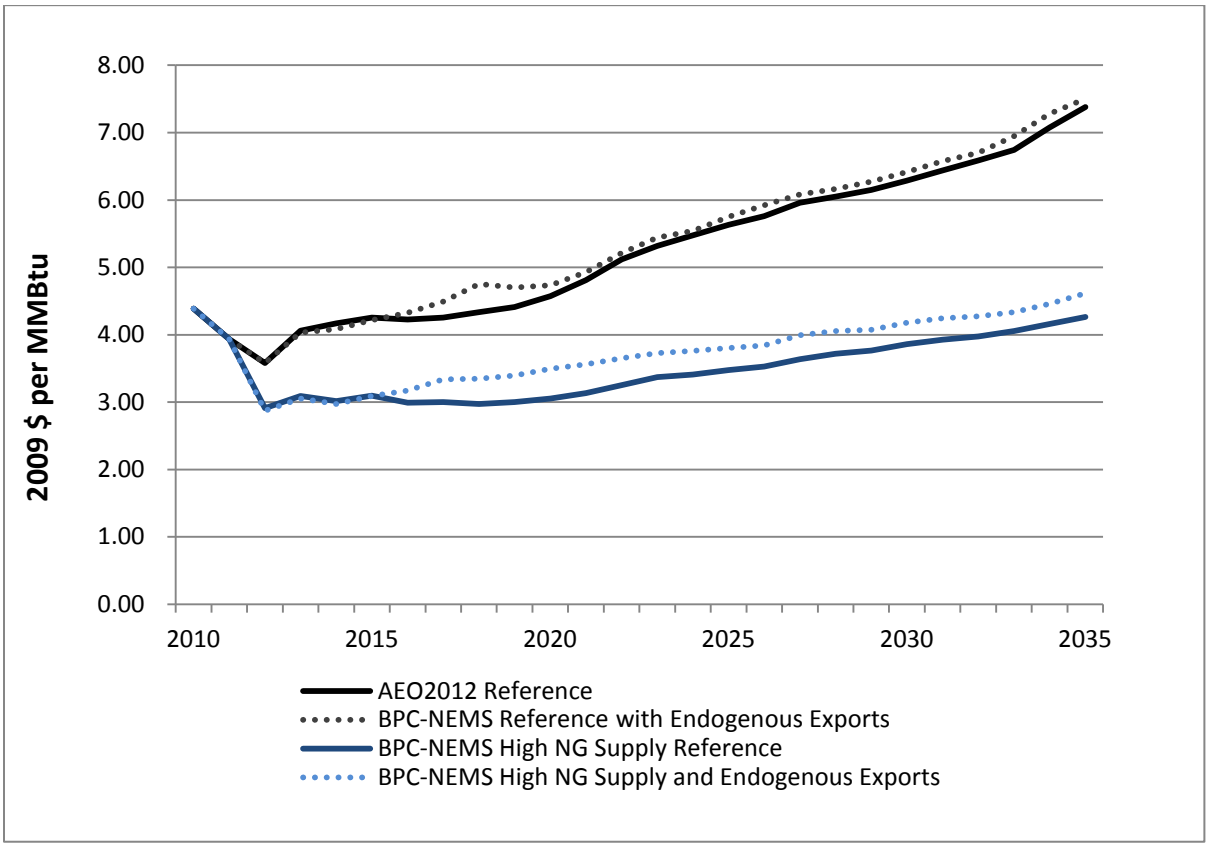
the AEO2012 Reference Case but also includes the BPC endogenous exports (BPC-NEMS Reference with Endogenous Exports); and, the BPC-NEMS case, where the AEO2012 Reference Case has been modified to increase the quantity of economically-recoverable shale gas and the BPC's international trade feedback. LNG export volumes ranged from 0.90 trillion cubic feet in the AEO2012 Reference Case, 1.4 trillion cubic feet in the BPC-NEMS case with the AEO2012 Reference Case natural gas supply and the BPC's international trade feedback, and 3.8 trillion cubic feet in the BPC-NEMS case with high natural gas supply and the BPC's international trade feedback.

Figure 1 – LNG Export Volumes



BPC's analysis also included an examination of the domestic price impacts of LNG exports. Figure 2 shows the Henry Hub natural gas prices under the initial scenarios considered by BPC. By modifying the BPC-NEMS case with AEO 2012 natural gas supply to allow for endogenously determined LNG exports, natural gas prices are slightly higher, rising by 2%, or $0.12 per mcf in 2025, over AEO 2012 Reference Case levels. Under the BPC-NEMS case with high natural gas supply and endogenous exports, the higher natural gas resource base keeps domestic prices well below AEO 2012 Reference Case levels, which in turn enable greater opportunities to cost-effectively export LNG. With endogenous LNG exports, the BPC-NEMS high natural gas supply with endogenous exports case Henry Hub natural gas prices rise by 9% or $0.33 per mcf over BPC-NEMS high natural gas supply reference case levels.

Figure 2 – Henry Hub Natural Gas Prices



Going forward, the BPC will continue to refine its modeling analysis and scenarios and will release a full analysis in the first quarter of 2013.

Disclaimer

These comments were prepared by the staff of the Bipartisan Policy Center with the aim of promoting a better shared understanding of the issues surrounding U.S. exports of LNG. While this paper was drafted to be consistent with the various initiatives of the BPC Energy Project, the views expressed here do not necessarily reflect those of the Bipartisan Policy Center's individual board or working group members. The full results of the BPC staff analysis will be released in Spring 2013.

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