From:	John Detwiler
To:	LNGStudy
Subject:	2012 LNG Export Study
Date:	Thursday, January 24, 2013 3:17:09 PM
Attachments:	2012 LNG Export Study - J. S. Detwiler.pdf

[for your convenience this entire message is also attached as a PDF file.]

Dear Secretary Chu:

I am responding to your 'request for comments' in this matter, per the Federal Register Notice of December 11, 2012. The following comments apply specifically to 'Part 2' of the 2012 LNG Export Study, performed by NERA Economic Consulting (**NERA**).

For the reasons detailed below, I respectfully request that you reject the NERA report and its conclusions. Further, I suggest that the DOE's obligation to assess the 'public interest' of LNG export has not been satisfied and that the docketed applications for LNG export authorization should be denied.

Thank you for your consideration.
Sincerely,

John S. Detwiler, Ph.D., P.E.
[redacted]

SUMMARY

1. **The NERA report is incomplete (as stipulated in the report itself)**
2. **The NERA report is not credible (because the contractor has a demonstrated bias in the subject)**
3. **The 'Key Findings' offered in the NERA report are not supported by the content of the report itself**

DETAILED COMMENTS

1. **The NERA report is incomplete**

The purpose of the NERA report (the "Report") was to "… evaluate the impact that LNG exports could have on multiple economic factors, but primarily on U. S. Gross Domestic Product, employment and real income.[1]" The Report, in '***Appendix E – Factors that we did not include in the Analysis***' lists the following exclusions:

A. How Will Overbuilding of Export Capacity Affect the Market
B. Engineering or Infrastructure Limits on How Fast U.S. Liquefaction Capacity Could Be Built

C. Where Production or Export Terminals Will Be Located
D. Regional Economic Impacts
E. Effects on Different Socioeconomic Groups
F. Implication of Foreign Direct Investment in Facilities or Gas Production

Each and every one of these <u>excluded</u> factors has significant implications for the 'economic impact' of LNG exports, and on the 'public interest' of approving such exports. Therefore, the NERA report – by excluding these factors – is an inadequate basis on which the DOE could approve the LNG export authorizations. In brief:

A. 'Overbuilding' is almost certain to occur. Extractive industries in general, and unconventional natural gas in particular, consistently demonstrate a 'boom and bust' behavior – driven by greed and ending in negative equity and stranded costs.
B. Not only do the Report's scenarios 'strain the capacity of engineering and construction providers', but the competition for such providers (between gas liquefaction facilities and the capital investments of other industries) will have a negative impact elsewhere in the U. S. economy which the Report does not take into account.
C. The Report acknowledges that 'basis differentials' will depend on locations – which it cannot know. But, since this critical variable has not been determined – and <u>cannot</u> be determined – the foundation of the entire analysis crumbles.
D. Any realistic assessment of 'impact on the U.S. economy' would necessarily consider '<u>Regional</u> Impacts'. It is fatuous to suggest that economic benefits to one region, with numerically equal economic damage to another region, can be taken as a 'net no change' to the U.S. economy.
E. Similarly (to 'D', above), in an era when growing economic inequality is one of the most worrisome trends in the Nation, it is unreasonable – if not malicious – to ignore the implications of further wealth transfer <u>from</u> wage-earning families and <u>into</u> the hands of investors.
F. 'Foreign direct investment' is already occurring to a dangerous extent in the unconventional gas fields. There is no reason to assume that such investment will not continue through the midfield and processing sectors, and into the export facilities – especially when the analysis is predicated on the strategic importance of imported gas (i.e., <u>our</u> exports, being <u>their</u> imports) to foreign actors. When such investment happens, then the purported benefits will flow (at least partially) to the foreign investors rather than to the U.S. economy.

Then, <u>in addition</u> to the Report's self-acknowledged omissions, the following factors are <u>at least</u> as significant for the U.S. economy – and are also omitted from consideration in the Report.

G. The impact of expanded 'fracking' on public health, food production and infrastructure. Export of natural gas requires implies increased extraction of natural gas from U.S. sources. (Indeed, the <u>only</u> rationale being offered for construction of export facilities is that such facilities will restore the profitability of unconventional gas extraction, which today is destroying shareholder value across the industry.) But that extraction, through 'fracking' is already ruining farmland (and removing good farmland from cultivation), destroying forests and watersheds, escalating medical costs, and driving other productive industries out of the areas where gas extraction is happening. None of those effects have been considered in the Report.

H. The impact of additional gas processing and transportation infrastructure.
Investments in gas processing and transportation are not neutral. More productive land will be pre-empted from other economic uses, people and industries will be displaced.

I. The catastrophic impact of climate change upon all economic activity.
The evidence implicating fossil fuel consumption in climate change is irrefutable. LNG export will have a major effect in increasing the world's use of fossil fuels. (As noted above, that is the very reason behind the applications to DOE for export authorizations.) Therefore, DOE's concurrence in LNG export can be predicted to cause immeasurable negative economic impacts through drought, extreme weather, and rising sea levels. None of these 'existential threats' to the U.S. economy are acknowledged in the NERA report.

2. The NERA report is not credible

The concerns about the selection, qualifications and biases of NERA Economic Consulting have been amply documented elsewhere [2]. In summary:

- DOE's selection of NERA was not transparent.
- NERA has a consistent public record of advocacy <u>against</u> environmental protections and promoting <u>denial</u> of climate change.
- Dr. David Montgomery (the Project Leader of this Report) is on record as opposing:
  - efforts to control carbon emissions
  - DOE's programs for green energy investment
  - improved fuel efficiency standards
- (Quoting [2]) *In short, Dr. Montgomery and NERA share intellectual commitments which have made them the favorite advocates of business interests seeking to oppose President Obama's public health and environmental efforts, as well as DOE's own efforts to increase the use of cleaner energy in this country. Many of <u>those same interests have much to gain from LNG exports</u>."* [emphasis added]

The Report itself reinforces those concerns in its Executive Summary, where it states:

> [B]enefits that come from export expansion more than outweigh the losses from reduced capital and wage income to U.S. consumers, and hence LNG exports have net economic benefits in spite of higher domestic natural gas prices. This is exactly the outcome that economic theory describes when barriers to trade are removed.[3]

That is, NERA asserts that 'net economic benefit' will be achieved because losses 'to U.S. consumers' are able to be 'outweighed' by increased profit to exporters. In other words, 'economic benefit' does <u>not</u> (to NERA) mean <u>benefit to Americans</u>.

3. The 'Key Findings' offered in the NERA report are not supported by the content of the report itself

As quoted immediately above, NERA asserts that *"This is exactly the outcome that economic theory describes when barriers to trade are removed."* Of course, this gloss is a philosophical statement – indeed, an <u>ideological</u> statement – and not in any way reflective of actual research. More significantly, this gratuitous comment is indicative of NERA's approach to its entire

'Key Findings' section.

Elsewhere in its purported 'Key Findings', NERA asserts that

> If the promise of shale gas is not fulfilled and costs of producing gas in the U.S. rise substantially, or if there are ample supplies of LNG from other regions to satisfy world demand, the U.S. would not export LNG. Under these conditions, allowing exports of LNG would cause no change in natural gas prices and do no harm to the overall economy.

There is nothing in the body of the Report to establish those sweeping generalizations as 'findings'. In fact, they are simply reassertions of NERA's unshakeable confidence in the simplistic 'economic theory' (quoting NERA's earlier remarks) of Adam Smith. The paragraph is composed of the following ideological axioms:

(a) The possibility of combining 'large quantities of gas from shale at low cost', 'world demand for natural gas increase[ing] rapidly', and limited 'supplies from other regions' would be the fulfillment of a <u>promise</u> (and not, say, of a <u>curse</u>);

(b) If simple-minded 'supply and demand' conditions weren't favorable, then unquestionably 'the U.S. would not export LNG'. This statement ignores many other financial, geopolitical, and irrational factors which are already demonstrably at work in the natural gas industry.

(c) '*Allowing exports of LNG would cause no change in natural gas prices and do no harm to the overall economy*'. Neither of the two negations in this statement is demonstrable. The first ('no change in natural gas prices') ignores the effect of sunk costs for export facilities when they are not exporting gas. The second ('do no harm to the overall economy') ignores the impact, described above, of aggressive extraction of unconventional natural gas which <u>will be undertaken in anticipation of exports</u>, even if those exports are not achieved.

Although the Report compares a range of scenarios, they are all <u>static</u> scenarios – none of them take a realistic view of the swings in gas supply, demand and pricing in the real world.

CONCLUSION

DOE should <u>reject</u> the NERA report and its conclusions, and applications for export authorization <u>should be denied</u>.

References

[1] NERA report, p. 212.
[2] See, for example, http://www.sierraclub.org/pressroom/downloads/LNG-Study-Contractor-1-22-2013.pdf
[3] NERA report, p. 1.
[4] NERA report, pp. 1-2.