



LNG Exports Still Causing Debate

Richard G. Smead

Right before the holidays, the *Wall Street Journal* published a widely discussed article recounting the status of proposals to export liquefied natural gas (LNG) from the United States, and the concerns of the industrial community as to the price impact of doing so.¹ The article cited work done by my firm, in support of one of the applications at the Department of Energy (DOE), as authority for the notion that the combined proposed exports would have a significant upward price impact.

DOE has already ruled on one project, the Sabine Pass Liquefaction application, approving exports to any nation at the requested level of 2.2 billion cubic feet a day. My firm's analytics team provided the North American market analysis and modeling upon which DOE relied in making that decision. However, as one might have expected, this is far from the end of the story. Multiple terminals have now applied for similar authority. The current roster of pending applications is shown in **Exhibit 1**.

So far at DOE, a total of 9.53 billion cubic feet a day has been approved or proposed to serve countries with which the United States has a Free Trade Agreement (FTA), and 6.61 billion cubic feet a day has been proposed to serve non-FTA countries. The two numbers are not additive—that is, volumes within the 6.61 billion cubic feet a day of non-FTA

proposals would replace portions of the 9.53 billion cubic feet a day authorized to go to FTA countries.²

The *Journal* article's reference to work by my firm involved the recent application by Dominion Cove Point to export 1.0 billion cubic feet a day to non-FTA countries. In that application, a comparison of the US market with and without the sum of *all* the large pending applications (Freeport, Lake Charles, and Cove Point) showed a difference in the 2020 Henry Hub price of 17 percent, or \$0.87 a million Btu's. As indicated by the *Journal* article, this difference helped fuel the ongoing debate between some in the industrial community and the proponents of export capability over the advisability of LNG exports. Are the concerns raised by the industrial community valid, and is it still a good idea to build some fairly large capability to be able to export some of America's natural gas abundance?

The US industrial market for natural gas declined significantly over the last couple of decades but is showing strong signs of coming back as a major growth market.

The US industrial market for natural gas declined significantly over the last couple of decades but is showing strong signs of coming back as a major growth market. Thus, *any* concern on the part of that community cannot be taken lightly, and both restoring and maintaining confidence among industrial users that the US natural gas industry can offer reliable, stable, reasonably priced service for a very long time must take a high priority.

For a variety of reasons, LNG exports can make a lot of sense, to support predictable, sustained de-

Richard G. Smead (rsmead@navigant.com) is a director in the energy practice of Navigant Consulting, Inc. in Houston. He previously held senior management positions in the gas pipeline groups of the El Paso Corporation and the Coastal Corporation.

Exhibit 1. Summary: Long-Term Applications Received by DOE/FE to Export Domestically Produced LNG From the Lower 48 States (as of December 7, 2011)

Company	Quantity (a)	FTA (b)	Non-FTA (c)
Sabine Pass Liquefaction, LLC	2.2 Bcf/d (d)	Approved	Approved
Freeport LNG Expansion, L.P. and FLNG Liquefaction, LLC	1.4 Bcf/d (d)	Approved	Under DOE Review
Lake Charles Exports, LLC	2.0 Bcf/d (d)	Approved	Under DOE Review
Carib Energy (USA) LLC	0.03 Bcf/d: FTA 0.01 Bcf/d: non-FTA (e)	Approved	Under DOE Review
Dominion Cove Point LNG, LP	1.0 Bcf/d (d)	Approved	Under DOE Review
Jordan Cove Energy Project, L.P.	1.2 Bcf/d	Approved	n/a
Cameron LNG, LLC	1.7 Bcf/d	Under DOE Review	n/a
Total of all Applications Received (FTA and non-FTA are not additive)		9.53 Bcf/d	6.61 Bcf/d

Source: Department of Energy, Office of Fossil Energy

velopment of US supplies by offering an additional demand destination. Industrial users who have to see stable long-term price behavior for gas to be an attractive commitment are important beneficiaries of any such sustained development and its price-stabilizing impact. As demand grows to pull supply forward from producers, it is the price of gas that measures the extent of the “pull.”

LNG exports can make a lot of sense, to support predictable, sustained development of US supplies by offering an additional demand destination.

ONLY A MODERATE IMPACT

Meanwhile, the differential impact on the market should be moderate—it should be emphasized that the studies performed for DOE were necessarily very conservative, both in the volume of projects that would actually go into service and in the assumed utilization of those projects. And the fact that the debate is now tending to focus on percentage impacts in the teens represents a very important shift in understanding: Even many of the critics of exports now appear to understand that any domestic price impact

does come from the impact on the US supply/demand balance, *not* from any interaction with international LNG prices. Until recently, a number of critics of exports have suggested that an active export market would cause US domestic prices to resemble those commanded from Asia and other high-priced LNG markets—the suggestion is incorrect, and it is really good to see the discussion now center on plain old supply-demand economics.

The reason exports do not cause international prices to affect domestic gas prices is simple. If the major marginal *supply* to the United States were to come from the world market, as was expected up until three years ago, the United States would have to compete for that supply with higher-priced markets, so that LNG import prices would be high, and the prices for domestic supplies could rise until they equaled that expensive marginal supply. LNG imports could pull up all of the domestic prices.

But if the marginal *demand* is a sale of domestic gas into the inlet end of some liquefaction plants that have limited capacity and finite markets, the only price impact is minor pressure on the domestic supply-demand balance. Why? Because (1) the economics of the export projects depend very heavily

on buying at low US prices and selling at high overseas prices—if US prices ran up, the export projects would not be able to pay off their investment; and (2) there is only so much US gas that can seek the LNG export destination. Thus, there is no general competitive impact on the market other than the demand “pull.” Very simply, if US supply stays ahead of demand, as it certainly has for the last three years, consumers faced with price increases from one producer will simply go to another producer.

If US supply stays ahead of demand, as it certainly has for the last three years, consumers faced with price increases from one producer will simply go to another producer.

Of course, now in the discussion around these supply-demand impacts, the concern expressed by the industrial community is that the volumes to be exported will strain that ability of supply to stay ahead of demand. The ultimate volume that the studies assumed to be exported is about 8 percent of total US supply, not insignificant but not huge. How realistic are the capacities and volumes that were used to arrive at that volume? The 6.6 billion cubic feet a day capacity, consisting of the 2.2 billion cubic feet a day already approved for Sabine and 4.4 billion cubic feet a day for the other three projects, is certainly plausible if they can all secure financing.

However, assuming that all four projects can secure markets sufficient to keep them running at a 90 percent load factor year-round (the assumption used in the DOE studies) is an extremely optimistic view of their success. Capacity of 6.6 billion cubic feet a day will represent a 13 to 17 percent increase in world liquefaction capacity, and if it operates at a 90 percent load factor, US exports would represent about 13 percent of total world LNG trade.³ The United States would be the number-three exporter, behind Qatar and Australia. But Qatar has extremely low-cost production in its North Field, and Australia is extremely close to the highest-value Asian markets.

Thus, nice work if we can compete successfully with these giants, but I would expect a significant share of the US capacity to be signed up for optionality and hedging purposes, or for US supply to have to compete on price, at lower levels than might have been anticipated. After a while, that

could stop being fun. If the ultimate outcome is one in which capacity is built but operates below a 90 percent load factor, the pressure on the US supply-demand balance will be considerably less than assumed in my firm’s studies submitted to DOE, and thus any upward pressure on prices will be less.

I would expect a significant share of the US capacity to be signed up for optionality and hedging purposes, or for US supply to have to compete on price, at lower levels than might have been anticipated.

How necessary is the demand “pull” in supporting long-term sustained development? There has been a lot of speculation about the effect of low prices on exploration activity. As I noted here in December, the very low prices over the last couple of years had not decreased the horizontal, gas-directed rig count yet, although oil-directed drilling activity had accelerated rapidly. Well, as of the end of December, this trend changed.

Exhibit 2 shows the horizontal gas and oil rig counts up through December 23. In the last week of that period, horizontal oil caught horizontal gas, and gas dipped below 600 rigs. The gas and oil rig counts had crossed in terms of total rigs (both horizontal and vertical) several months ago. This change represents concrete evidence that the redirection from gas plays to oil plays is starting to have an effect. Thus, it is critical that we build demand to pull on gas supplies and establish stable prices at the somewhat higher levels necessary for sustained development, and exports are a key element in doing that.

None of this suggests that the current and near-term growth in US gas deliverability will slow down any time soon. As I also noted in December, regardless of rig count, the wells are being drilled twice as fast as they were a couple of years ago, meaning that a lot more gas can come to market per rig. As **Exhibit 3** shows, shale production has stayed right on or above the combined projections of independent producers from three years ago.

The implication of these producer shale production forecasts (even without the potential suggested by the steeper “actual” curve) is that there is a great deal of supply surge capability. The Energy Information Administration had pretty aggressive shale and total supply forecasts in its 2011 *Annual Energy Outlook*. The EIA total-supply forecast is shown in

Exhibit 2. Gas-Directed Horizontal vs. Oil-Directed Horizontal

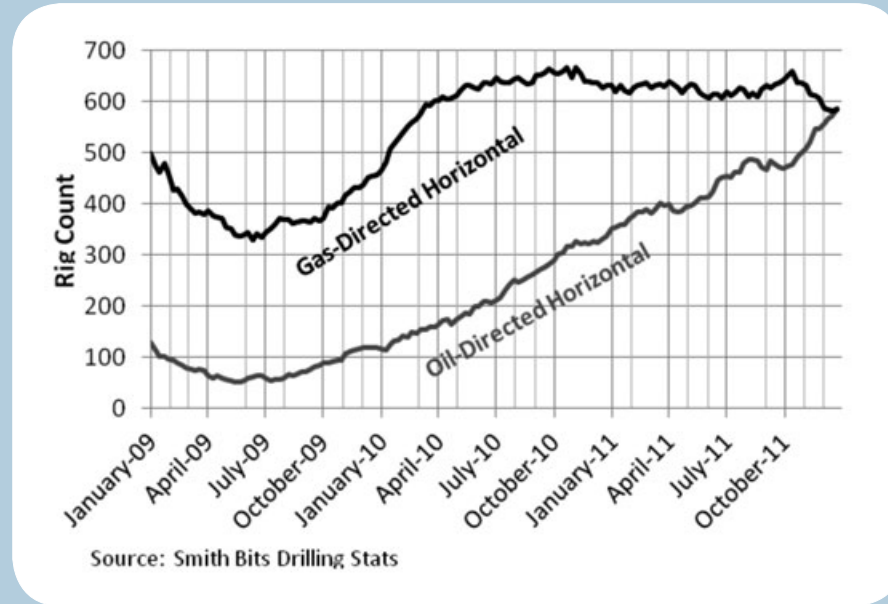


Exhibit 4. But as Exhibit 4 also shows, there is probably a lot more gas—adjusting the EIA supply numbers for the producer forecast provides an extra 10 billion cubic feet a day of capability in 2020, which can certainly support a lot more than 6.6 billion cubic feet a day of exports.

However, supply has simply overrun demand to a degree that can ultimately frustrate development. The EIA shows prices of \$5.00–\$6.00 to be necessary by 2020, but my firm’s study showed that, even with the already approved Sabine project in place,

prices would still lag below \$5.00 in 2020. Then the study showed that prices in the \$5.00–\$6.00 range are consistent with very large exports. This analysis is all a long way of saying that exports or some other equally large demand for gas is necessary for prices to reach the stable levels that the EIA indicated are necessary for long-term supply development.

Meanwhile, no one ever knows for certain what will happen in the future. It is always conceivable that something could happen to skew the supply-demand balance, either through big new areas of

Exhibit 3. Producer 2008 Composite Forecast

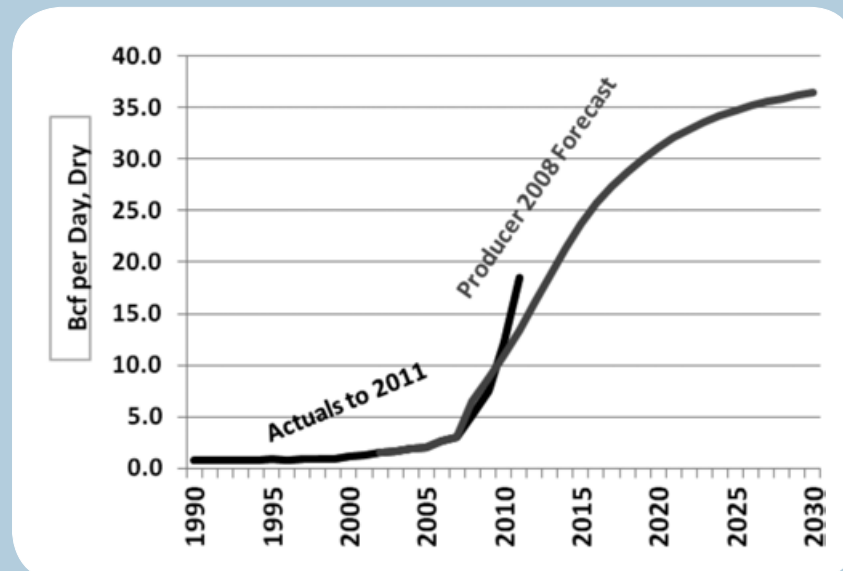
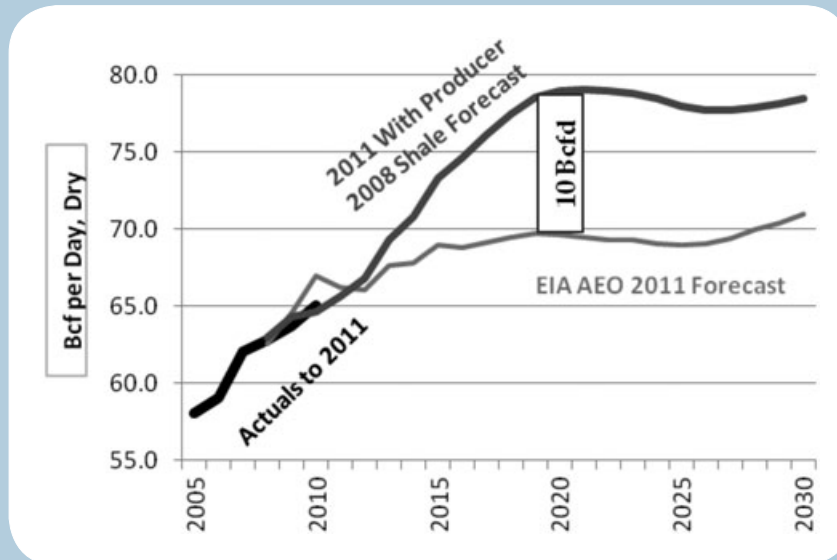


Exhibit 4. A Lot of Supply Capability




consumption or through some frustration of the pace of supply development (such as restrictions on hydraulic fracturing). Accordingly, DOE is being cautious. It has directed the EIA to do a separate study of the potential impact of the aggregate capacity of all the export proposals.

The agency is watching, and intends to act in the interests of US consumers if necessary down the road.

Additionally, in the Sabine authorization, which is the only non-FTA project approved so far, DOE included language in the order allowing a future reevaluation if supply and demand became too tight. In other words, the order more or less says “we authorize your exports for the requested term unless sometime during that term we get uncomfortable with it.” Many of us are not crazy about the way DOE did this, leaving some fairly open-ended uncertainty for investors. There could have been other, more stable ways to keep its options open.⁴ But regardless of the mechanism used, the stand-out aspect of DOE’s language is that the agency is watching, and intends to act in the interests of US consumers if necessary down the road. Further, the study requested from the EIA will undoubtedly be a major guiding factor as DOE considers the other pending applications.

Thus, there appears to be plenty of protection for US consumers such as the industrial market.

The most likely scenario, in my view, is that a few successful export markets will remotivate aggressive domestic gas development, and that while prices will ramp into the areas indicated by the EIA as being necessary for development, they will simply stay there—stable over a broad range of volume levels as producers respond to demand. But if that turns out not to be the actual scenario, DOE has left itself ample room to respond. The bottom line for everybody—do not worry, just get out there and use this valuable resource. 

Exports or some other equally large demand for gas is necessary for prices to reach the stable levels that the EIA indicated are necessary for long-term supply development.

NOTES

1. Tracy, T. (2011, December 22). Gas exports ignite a feud. *Wall Street Journal*. Retrieved from <http://online.wsj.com/article/SB10001424052970203686204577112493261431530.html>.
2. It is really the non-FTA proposals that are the more important, since the countries with which the United States has an FTA tend to be mostly smaller markets or exporting countries themselves. Most of the really large destination markets for LNG are in the non-FTA category.
3. Navigant analysis based upon *Oil & Gas Journal* reporting of global export capacities.
4. An example would be an approach used for decades by Canada, wherein a series of layered authorizations would be granted with different terms, so that if things ever became tight, DOE could simply decline to renew some of the shorter ones.