

Demand Drivers For Natural Gas



By John Harpole

If you are in the natural gas business, you are residing in a world of copious supplies and anemic demand. Four specific areas could add to demand in the coming years: electric power generation, industrial consumption, liquefied natural gas (LNG) exports and compressed natural gas (CNG) vehicles.

Several energy research firms have looked at the potential increase in demand that each area could generate. Here are some of their thoughts, arranged in order of expected impact.

Power and industry

The increased use of natural gas to fuel electric generators is considered a major component of demand growth. Bernstein Research recently completed a lengthy analysis of the impact on the electric generation sector of the Environmental Protection Agency's new rules on air toxins and pollution.

By 2015, Bernstein estimated that 54 gigawatts (GW) of coal-fired capacity would cease operations rather than incur the cost of complying to the new rules, while another 74 GW would be upgraded. A further 12 GW of coal-fired capacity is likely to be retired as these units reach 60 years old. The bottom line was a net increase in utility demand by 2015 of some 2.5 billion cubic feet (Bcf) per day.

On the industrial demand side, the outlook is also bright. Between 1998 and 2006, 14 ammonia plants were closed throughout Texas and Louisiana. Natural gas is the primary feedstock for ammonia plants, and high natural gas prices were a top factor in those closures. Today the economics are quite different: Ammonia is worth approximately \$590 per ton, and at current U.S. gas prices, it can be made for about \$180 per ton.

That favorable spread means the top five world producers of ammonia are considering building (or reopening) as many U.S. facilities as possible.

The petrochemical industry sees the same positive markets. ICIS Chemical Business reported in February 2012 that U.S. ethylene capacity was about to soar. ICIS expects a "slew of ethylene expansions that could amount to 29% of current capacity by 2017." Across the industry, the list of companies looking at expanding existing facilities or building entirely new ethylene crackers is lengthy.

Overall, the industrial sector could add incremental gas demand of 1 to 2 Bcf per day in the next few years. Add to that the 2.5 Bcf per day from electric-power generation, and we have a good packet of near-term demand growth just ahead.

Exports and cars

Near-term demand growth from LNG and CNG vehicles is less certain.

North America's natural gas is now some of the cheapest in the world and, as a result, LNG exports from the U.S. and Canada "are likely to be economical," noted Goldman Sachs in an October 2011 report.

Currently, 15 applications to export LNG from the U.S. have been received by the U.S. Department of Energy (DOE). For LNG destined for countries that have a free-trade agreement with the U.S., the permitting process is expedited. For export to non-free-trade countries, the process is more complex.

To date, Cheniere Energy's Sabine Pass project in Louisiana has made the most progress. It is the first Lower 48 project to receive DOE approval for export to non-free-trade countries,

and it has received its construction license from the Federal Energy Regulatory Commission. The project is expected to be operational as early as 2016. Cheniere has contracted "take-or-pay" commercial contracts of approximately 2.2 Bcf per day.

Currently, there is a de-facto moratorium on approval of additional export applications. The Obama

Administration is awaiting the results of a study

on the economic implications of LNG exports, and that study is not likely to be completed before the November election.

That makes demand for natural gas to fuel these projects quite unpredictable in the short term. Once permits are in hand, it will take several years for a facility to be built and begin exports.

Turning finally to automobile transportation, the U.S. currently has about 110,000 CNG vehicles on the road, according to a June 2011 report by Raymond James and Associates. All CNG vehicles, most of which are owned by fleet operators, comprise less than 0.1% of all U.S. vehicles.

Certainly, both LNG exports and CNG vehicles have to also be considered longer-term solutions to our dilemma of abundant natural gas supplies and lackluster demand. ■

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