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Analyst Urges Caution for Fleets, Railroads Considering LNG Conversions



LNG Truck Refueling /Source: UPS

A new study by Georgia-based business-economics analyst Jon Gabrielsen concludes that North American trucking fleets and railroads should be cautious about making any big moves into liquefied natural gas (LNG) fuel – and away from diesel.

Key reason: Today's wide price discount for U.S. natural gas over diesel fuel is an historical aberration and – if history is any guide – not likely to continue forever.

The study (freely available by contacting jongabrielsen@yahoo.com) examines the long price history of crude oil (and diesel) and natural gas.

The recent crash in North American natural gas prices – caused by a frenzy of shale-gas drilling, a phenomenon that's already starting to fade – seems likely to be followed by a future decline in crude oil prices, caused by expansion of shale-oil and oil-sands production, Gabrielsen explains.

Even if crude oil prices fall modestly from today's roughly US\$90 per barrel (/bbl) for the benchmark West Texas Intermediate – to around \$75/bbl – the economic rationale for a large-scale move to liquefied natural gas (LNG) by trucking or railroads evaporates, the study shows.

With crude oil at \$75 – equivalent to diesel fuel retailing at \$3 per gallon (/gal) – LNG at today’s prices only would deliver “breakeven” economics for fleets and then only if “very significant improvements” somehow appear in LNG liquefaction and logistics costs, the study shows.

Such “very significant improvements” in LNG liquefaction and logistics costs “may or may not be possible, in which case LNG would be a net loser” with diesel fuel at \$3/gal, he explains.

If crude falls to \$50/bbl, then “converting to LNG could not possibly generate economic benefits,” the study shows.

In contrast to the more cautious Gabrielsen analysis, the 2013 version of the U.S. Energy Information Administration (EIA) *Annual Energy Outlook* optimistically has a reference scenario where crude would climb from around \$100/bbl today to around \$150/bbl by 2040, Gabrielsen points out.

However, the EIA’s “low price” scenario nevertheless shows crude falling to \$70 by 2016 and hovering near that level to 2040. Yet even at \$70, “this is still triple the [crude oil] price of only a decade ago,” Gabrielsen explains.

Meanwhile, natural gas prices could rise even as oil prices fall. Even so, the commodity cost of natural gas is less of a factor than the gas liquefaction and LNG distribution costs, plus the much higher capital cost of LNG trucks and locomotives, the study shows.

So, the real issue for fleets considering LNG conversions must focus upon the future cost of crude oil, rather than today’s relatively “cheap” natural gas, Gabrielsen explains.

In the U.S., “LNG on a diesel-gallon-equivalent energy basis has only been consistently cheaper than diesel for three years in all of history,” according to the study.

“Crude oil has only been in the \$90-to-\$100-per-barrel range, and diesel in the \$3-to-\$4-per-gallon range for four years. And that [diesel price] level is three to four times the level it held at for the 24-year period before that...

“Citi Research makes a very persuasive case that growth in global oil demand is peaking due to substitution with natural gas, increasing fuel efficiency [and other factors] They project that by the end of the [2010 to 2020] decade, Brent crude will hover in the \$80-to-\$90-per-barrel range,” which is below the 2013 EIA forecast, Gabrielsen notes.

So while some trucking fleets and railroads may wisely continue to experiment on a limited scale with LNG – in order to help perfect the technology and also hedge against the future – it would be a “huge” risk to make a massive switch to LNG today, based on historical crude-oil cost trends, he explained.

Those fleets that would like to hedge their price risk with dual-fuel (LNG and diesel) engine technology also must take into consideration the higher capital cost of dual-fuel systems, he added.

Bottom line: “Diesel doesn’t have to tank much” on price to turn a big investment in LNG into a big loser, Gabrielsen told Hart Energy in a May 3 interview.

“Tried and true diesel continues to be the better bet,” based on the long historical experience with crude oil and natural gas prices, he added.

– [Jack Peckham](#)