



Drillers take “waste not, want not” to heart

Being of the gray-hair, no-hair generation, I can still hear my mother at the dinner table dressing down my siblings and me for not eating all the food on our plates, what with all those poor kids starving in China. Never mind that today, many of those poor starving kids are bankrolling a good part of the world. The point of the guilt trip remains very clear: It's disrespectful to squander what one has in excess.

With recent reports that gas flaring has skyrocketed, particularly in oily Texas and North Dakota, it's hard not to imagine a collective “tsk, tsk” coming from mothers everywhere. The Texas Railroad Commission says that over the past two years, the number of flaring permits it has authorized has more than doubled, while across western North Dakota, *The New York Times* last September reported that in excess of 100 MMcf of gas were being condemned to flare stacks every day. Certainly, when you juxtapose the relative price of a barrel of crude to an Mcf of gas, it makes sound business sense for oil producers to dispatch this uninvited byproduct to the heavens, rather than try to fit it through pipelines that are already full.

Now, however, some of the folks credited with, or—depending on your perspective—responsible for, the glut that has sent gas prices to a 10-year low of below \$2/Mcf, are doing what they can to make a dent in the unprecedented surplus that they largely created. With Canada's largest gas producer, EnCana Corp., as its leading advocate, a drive to convert drilling rigs from running on diesel to liquefied natural gas (LNG) is accelerating. This is a move that EnCana and others say, not only puts some of the burgeoning supply to good use, but saves money over the long haul and is a cut-above environmentally.

Prometheus Energy Group Inc., which bills itself as one of the largest, fastest-growing suppliers of LNG to the North American industrial sector, is the recognized pioneer in converting diesel-powered rigs to cleaner, cheaper LNG. Prometheus is owned by Royal Dutch Shell's

technology fund and Black River Asset Management, a subsidiary of Cargill Inc. With offices in Redmond, WA, and more recently in Houston, Prometheus, at last count, has converted some 10 rigs that it presently services with no shortage of potential clients.

“Interest has really exploded in the last six to eight months,” said Prometheus CEO Ron Bertasi. “The primary driver for the interest we're seeing is the desire of the drilling companies and their clients, the E&P companies, to cut their drilling fuel bills. Anything they can do to cut drilling costs is a good thing.”

Bertasi said Prometheus' technologies provide conversion options—one that is relatively inexpensive, fast and simple, and another that is more complex and not necessarily for the fiscally squeamish. Wholesale conversion, using a dedicated natural gas generator package, reportedly can cost upward of \$1.5 million. Bertasi said most of the LNG-fueled rigs in service today employ dedicated natural gas generation, but more and more companies are now looking closely at the less-expensive option. “We're also seeing a trend today toward dual-fuel gen sets. In other words, you take an existing diesel gen set and use a conversion kit to allow it to run on both diesel and gas,” he said.

Regardless of the option, he said the payback is attractive. “The payback varies with some seeing (fuel cost) reductions of 5% to 10% and others more than 40%. Using a conversion kit to allow a diesel gen set to use both diesel and gas in a blend is relatively inexpensive, quick and simple, so the payback is quite fast. Buying a dedicated natural gas gen set, when building a rig or replacing a generator, is more expensive, but the payback is still very attractive, especially when fuel costs are high, and you're using a lot of fuel,” said Bertasi.

EnCana is definitely a believer, telling Reuters that 15 of the 40 rigs it operates are now powered with LNG, and more conversions are on the boards. The operator said that running LNG-fueled rigs

in its Haynesville shale operation cut fuel costs by \$830,000, or roughly 47%, compared to diesel rigs. Chesapeake Energy Corp also told Reuters that it is in the process of converting its rig fleet to run on diesel natural gas (DNG). The operator said it plans to have more than 40 rigs running on DNG by the end of the year.

Prometheus provides the entire fuel package, including associated equipment and services, excluding the generator package, which the contractor typically provides, Bertasi said. “We provide the fuel and truck it to the location, where we provide on-site storage. We hold the fuel in liquid form, and then, as it's needed, we vaporize it back to gas for the generator to burn.”

Since gas-fueled generators naturally run much quieter than their diesel counterparts, and emit much lower greenhouse gases, Bertasi said the environmental benefits are also driving the conversion push. “We have customers, who are using natural gas generators, in part because of permitting difficulties (with diesel generators). We're seeing others who like it, because it's much quieter, and when you get into some of these urban drilling theaters, that means a great deal.”

Obviously, converting drilling rigs to run on LNG will not take an appreciable bite out of the seemingly bottomless stockpile, but proponents say it can be significant when put in the context of a gas-driven manufacturing revival and increased momentum in the transportation sector. Steve Farris, CEO of Apache Corp., which is converting its first rig to run on LNG, put it succinctly, recently telling Reuters, “What we need to do is increase the amount of natural gas demand in this country. From an economic standpoint, it's a no-brainer.”

It's also enough to make a mother so very proud. **WO**

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