

**Michael Lynch** Contributor*I analyze petroleum economics and energy policy.*

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Methane Leakage: Low-Hanging Fruit

The EPA has proposed new regulations intended to reduce the leakage of methane and the usual contretemps has begun: industry opposes the regulations as unnecessary, environmentalists want tough regulations that ignore costs. All parties should follow the example of Colorado, where interested groups got together and designed fracking regulations that appear to be both effective and cost-effective. This is so far from the usual “fight it out in court,” approach to environmental regulation that observers like me feel as if we’ve gone Through the Looking Glass.

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Recent research conducted by the Environmental Defense Fund and various universities suggests that methane emissions from the petroleum industry is higher than expected, though trivial compared to the nation’s consumption. Not surprisingly, they found that a significant portion comes from a few “super-emitters,” often due to human error (valves left open, for example). Much of it seems to be associated not with production (at the wellhead), but in gathering and processing plants as well as distribution pipelines. In other words, it’s less of a fracking issue and more of a gas issue.

[Their research](#) also highlights two important facts, namely that most of the emissions come from a small number of sources, so-called super-emitters, and that cities with older pipelines experience far more leaks. Boston, for example, proved to have one leak for every mile covered by a mobile sensors, while in Indianapolis, leaks were found every 200 miles.

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The industry's response has not been particularly helpful. Essentially, the position is that the industry has been reducing emissions and that, since leaks represent lost revenue, they will naturally try to minimize them. The implication is that the industry should only oppose the regulation if it is poorly designed and if it creates another layer of paperwork and reporting. This suggests that the industry should sit down with the EPA and environmentalists and try to revise the existing body of regulations to make them more efficient.

The development of smaller, cheaper sensors also suggests that the problem can be addressed much more easily than in the past. For large natural gas fields with many wells, self-driving cars with sensors could be used, and in the near future, this can be expanded to cities. Utilities should be allowed the funds necessary to replace aging pipelines, while the petroleum industry

Of course, the real problem is not the US petroleum industry, but operations overseas. For one thing, it is estimated that approximately 5 Tcf of gas is flared every year around the world, an amount equal to 20% of US consumption and producing about 300 million tons of CO₂. Reducing this would make a notable contribution towards achieving

Additionally, given estimates of about 10 million metric tonnes of industry-related leakage in the United States, imagine what it would be in areas like Russia which produces nearly as much gas? Although many believe that "capitalism" is responsible for pollution, the truth is that the Soviet Union (and Eastern European Communist governments) rarely even paid lip service to protecting the environment. Since the US produces roughly one-fifth of the world's natural gas, then there is presumably at least 50 million tonnes of leakage globally, and quite possibly twice that. Since methane has 25 times the greenhouse effect of CO₂ on a pound for pound basis, that implies over 1 billion tonnes CO₂ equivalent, just from leakage, possibly as much as 3 billion. This would be equal to between 3 and 10 percent of global CO₂ emissions.

Obviously, checking every pipe and valve would not be cost-effective, but using airplanes to find major sources of methane, and then ground vehicles to pinpoint the precise leaks, could be



done in much of the world. And given the contribution of “super-emitters,” reducing the leakage by half should be relatively inexpensive. The challenge will be getting poorer nations with natural gas infrastructure to undertake the task. And it would be much more cost-effective than subsidizing electric vehicles, for example.

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