

Methane Admissions

Federal agencies work to minimize methane emissions

By Benjamin H. Grumbles



I confess to having a preoccupation with methane emissions, beginning in my earliest toilet training days and carrying over to today's developments in wastewater, landfills, oil and gas production and distribution, and resource recovery writ large. Beyond the bathroom humor, though, there is a real climate of opportunity for reducing wasteful emissions of this potent greenhouse gas (GHG) and transforming water and wastewater facilities into green factories.

I'll start with a few of the well-known facts. Methane is a colorless natural gas, yet it colors our world. Like carbon, nitrogen and phosphorus, it is just about everywhere, sometimes in amounts too large or small for human comfort or convenience. About 30% of U.S. emissions come from oil and gas systems. Agriculture, coal mining and landfills provide the rest. Wastewater systems are definitely in the mix, too.

Now for a big, shiny fact: This GHG is at least 20 times more potent than carbon dioxide. Efforts to capture and capitalize on methane can deliver a lot of bang for your GHG mitigation buck and generate new wealth in energy markets.

Making Progress

While at the U.S. Environmental Protection Agency (EPA), I saw growing interest in the national wastewater sector to boost the percentage of treatment works using anaerobic digestion. Dozens, but not thousands, of progressive utility managers looked to put their biogas to work to supply energy in-house and even, in a few instances, outhouse (i.e., to the grid beyond the fence lines). The Bush administration also advanced a global "Methane to Markets" initiative to boost non-regulatory incentives for the energy, mining, agriculture and solid waste landfill sectors.

In 2013, the National Association of Clean Water Agencies, the Water Environment Federation and the Water Environment Research Foundation launched a major policy and research effort to define and promote the water resources utility of the future. An important part of that vision was anaerobic digestion and the conversion of fats, oils, grease, biogas and other valuables into energy. Since then, congressional interest in and local trends on methane capture and reuse have continued to grow.

The big news in 2015: the Obama administration's efforts, announced Jan. 14, to issue first-ever EPA and Department of the Interior regulations to cut methane emissions from the oil and gas sector by 40% to 45% over the next decade from 2012 levels.

The regulations, to be proposed in 2015 and finalized by 2016, apply only to new or modified facilities. That is a big disappointment to some of the environmental organizations. They point to the large infrastructure system already in place: 190,000 miles of pipe carrying oil, gas and petroleum products.

(Compare that with the roughly 3 million miles of water and wastewater pipe in the U.S.) In addition to considering mandatory methane emissions reduction and reporting requirements, EPA also has proposed a voluntary emissions control and public recognition program known as Gas STAR Gold. EPA has identified 20 sources of methane emissions within oil and gas facilities, and for each, a set of emissions reduction protocols involving technology or operational changes. To get Gas STAR Gold status and positive public recognition, facilities would have to adopt relevant protocols.

EPA also plans to develop new guidelines to help states reduce volatile organic compounds (VOC) from existing oil and gas systems in ozone nonattainment areas and states in the Ozone Transport Region. The agency plans to accomplish these reductions by issuing control technique guidelines that provide guidance to states on the available, cost-effective technologies for controlling VOC emissions from covered oil and gas sources. EPA also will promote transparency and accountability for existing sources by strengthening GHG reporting programs and the use of remote sensing technologies and other innovations to improve GHG identification and quantification.

Cooperating Across Agencies

The White House announcement also described actions by other federal agencies—for example, the Bureau of Land Management proposing new standards in 2015 to reduce wasteful venting, flaring and leaking of natural gas from new and existing oil and gas wells on public land, and the Department of Transportation's Pipeline and Hazardous Materials Safety Administration proposing natural gas pipeline safety standards in 2015. President Obama also will propose \$15 million in funding for the U.S. Department of Energy (DOE) to develop more cost-effective technologies to detect and reduce losses from natural gas transmission and distribution systems and \$10 million to develop enhanced systems to quantify emissions from natural gas infrastructure for inclusion in the national GHG Inventory. The DOE will plan on issuing energy efficiency standards for natural gas and air compressors, advancing research and development to reduce the cost of detecting leaks, and working with the Federal Energy Regulatory Commission to modernize the natural gas infrastructure. This high-level, cross-agency cooperation on methane is needed in the water sector, too. Of course, it will need to be different, as the players, drivers, mechanics and motivations in the water sector can differ dramatically from those in the oil and gas sectors.

An observation of mine: The economics of closed-loop digesters and methane-to-market systems can be hard to stomach in some sectors and communities. Finding the sweet spot for regulating this relatively sweet gas will take more time. In the end, though, we need to get at it with dispatch, public support and market incentives. Water and wastewater facilities may not face the policy heat and pressure to the same extent as oil and gas systems under the Clean Air Act and potential GHG regulations, but they can still move the ball forward. Resource recovery, done right, makes more environmental and economic sense than resource release. As former Secretary of State George Shultz said (as noted on the Environmental Defense Fund website): "The environmental benefit of reducing methane emissions is clear, and we must stop wasting the natural gas that is so essential to our national energy security." Wealth over waste—it wins every time when given the chance. **w&wd**

Benjamin H. Grumbles is acting secretary, Maryland Department of the Environment. Views expressed in this column may not necessarily reflect those of the Maryland Department of the Environment. Grumbles can be reached at bhgrumbles@gmail.com.