

Today, Southern California Gas announced it has successfully and permanently stopped the methane leak at its Aliso Canyon storage site. This marks the (fingers-crossed) end of a multi-month environmental crisis in northwest Los Angeles, causing residents to move and schools to close. Earlier this month, I blogged about the possible lessons we could learn from the methane leak at the Aliso Canyon natural gas storage facility about California's regulation of the oil and gas sector and the institutional enforcement structure. In this blog post, I will focus on what we may learn from Aliso Canyon about California's current climate change agenda and regulations, and by extension, those of the U.S.

California has the most ambitious and far-reaching GHG emissions trading system in the country, but even this scheme does not encompass the methane being released into the atmosphere at Aliso Canyon. Although methane is one of the greenhouse gases included in California's cap-and-trade system, only certain sources of emissions are covered. For underground storage facilities, [operators have a compliance obligation](#) (i.e. must hold allowances) for the emissions from the combustion or flaring of any gas at the facility, equipment and pipeline blowdowns, and venting from certain equipment. The leak at Aliso Canyon is actually coming up through the ground around the well due to a corroded pipe far below the surface. Since this is not included in the short list of non-combustion emission sources for which underground storage operators must hold allowances, SoCal Gas will not have an obligation to procure allowances on the market for the 2.3 MMTCO_{2e} emitted by the Aliso Canyon facility leak. It will be able to meet its emissions cap despite causing a release equal to almost 13% of the oil and gas sector's annual methane emissions, and records of the cap-and-trade system will not give any indication that this leak occurred.

That is worrisome. This is California - the most progressive, ambitious state when it comes to environmental issues, especially climate change. Our Cap-and-Trade system is hailed as the broadest in history, covering more categories of economic activity than even the European Trading System. Yet it is not designed to address the fugitive emissions that are responsible for most of the methane released by oil and gas activities. CARB intends to create targeted emission reduction programs to capture these and other emission sources not included in the cap-and-trade system, but the regulatory process takes time, and that is one thing we are very short on when it comes to climate change. If California, historically the first state to act on environmental issues, doesn't have methane regulations in effect until 2017 (if not later), other states will surely not follow suit for many years to come. Considering methane's global warming potency, this would be very bad news for the climate.

The Aliso Canyon leak is only one example of this. Abandoned oil and gas wells also emit methane, and California has a long history of oil and gas development. The [California Energy Commission estimates](#) that there are tens to hundreds of thousands of abandoned wells in California alone, and many of these are “lost” - they were developed before regulations requiring meticulous record-keeping, and there are no records of their existence. Perhaps this, in combination with the great uncertainty as to how much methane any given well actually emits, is why ARB did not even include an estimate of these emissions in the statewide GHG Inventory. And if California’s GHG Inventory doesn’t accurately reflect its real emissions, how can it claim a specific reduction in those emissions?

Of course, this is perhaps asking too much. California, along with the EPA and most countries in the world, is taking on a monumental task in trying to measure the various gases its residents, industries, and animals emit into the air. No such inventory is going to be completely comprehensive or exact, nor do we have the time for such demanding perfectionism even if it were possible. What we need is an inventory that captures, as accurately as possible, the major sources of GHGs and their proportionate contribution to total emissions, so that we can make informed policy decisions about what reductions will have the most impact. That being said, if we neglect entire categories of emissions, such as abandoned wells, we might skew the emissions portfolio and miss opportunities for easy reductions.

States are not the only players that need to address these issues. In March 2014, the [White House released](#) the latest piece of its Climate Action Plan - its Strategy to Reduce Methane Emissions. The strategy outlines several planned actions to reduce methane emissions, both at home and abroad, including reducing fugitive emissions from the oil and gas sector and from coal mines. This summer, on August 18, 2015, EPA followed through on this strategy when it released [proposed regulations](#) of new and modified sources in the oil and natural gas industry. The proposed regulation updates the 2012 New Source Performance Standard (NSPS) that set standards under the Clean Air Act for volatile organic chemicals (VOCs). The 2015 proposed amendment would add standards from methane emissions and would also apply these standards to emissions sources the 2012 rule did not cover: completion of hydraulically fractured oil wells, pneumatic pumps, and certain equipment used at natural gas transmission compressor stations and storage facilities, and, notably, equipment leaks (fugitive emissions).

These are very important additions to the NSPS for oil and gas, but they will only apply to new or significantly modified facilities. As noted in my last blog post, the wells and pipes most vulnerable to leaks are the oldest ones, like the one at Aliso Canyon. Although it

stopped short of issuing methane emission standards for existing sources, EPA did new guidelines for states to determine the “reasonably available control technology” (RACT), the emission standard for sources in nonattainment areas, for VOCs in ozone nonattainment areas. Many of these technologies also reduce methane emissions, so EPA is indirectly requiring methane reductions at existing sources. But these guidelines do not require the maintenance and repair of aging infrastructure, the only thing that would have prevented Aliso Canyon. And from an initial review of the new source standards, those also only require repair and replacement of equipment *after* a leak is detected. Not all repairs will take four months, but as those of us in Los Angeles just saw, it only takes one to cause a crisis.