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Discussion draft concerning CARB proposed mitigations for the Aliso Canyon methane leak.

This document is intended for discussion at the April 4, 2016 meeting of the EJAC under Short Lived Climate Pollutants.

Below, in bold print, are some excerpts from the draft mitigation document that was apparently discussed with some stakeholders but never discussed with the EJAC even though we asked for information about this during our February 5, 2016 meeting. This mitigation document was released on March 14, 2016 and had a very short, ten day comment period. The document may be revised and ready for Board approval at the April meeting. It is very important that this mitigation be done correctly since it will set a precedent for other such mitigation needs in the future.

The entire draft mitigation document can be read at http://www.arb.ca.gov/research/aliso_canyon/draft_aliso_canyon_mitigation_program_03142016.pdf

This document sets forth the California Air Resources Board's (ARB or Board) recommended approach to achieve full mitigation of the climate impacts of the Aliso Canyon natural gas leak. This leak at a Southern California Gas (SoCalGas) natural gas storage facility in Los Angeles County emitted almost 100,000 tons of methane, a potent greenhouse gas, into the atmosphere from October 2015 to February 2016. ARB estimates that the leak added approximately 20 percent to statewide methane emissions over its duration...

...ARB welcomes comments on this draft. Comments can be posted and viewed through the Aliso Canyon page on ARB's website (http://www.arb.ca.gov/research/aliso_canyon_natural_gas_leak.htm) through 5:00 p.m. (PST) on March 24, 2016. ARB will review these comments prior to its production of a final version of its mitigation program on or before March 31, 2016...

...In connection with the mitigation program, ARB recommends using the 20-year GWP for methane assigned by AR 5. This figure properly incorporates current scientific knowledge, underscores the influence of SLCPs as immediate climate-forcing agents, and emphasizes the need for immediate action on climate change. The anticipated consequences of climate change by 2050 and 2100 are sufficiently dramatic and irreversible to make it inappropriate to tether mitigation here to methane's impacts over an even longer time horizon. Using the AR 5

20-year GWP of 84, the approximately 100,000 tons of methane emitted in the Aliso Canyon leak amount to about 8,000,000 metric tons of carbon dioxide equivalent (8 MMTCO_{2e})...

...Additionally, to carry out the directives in the Governor's Proclamation ARB has defined several core principles that individual projects must satisfy to be eligible for inclusion within the mitigation program. At a minimum, each project within the program must: Occur within the State of California; Complement the existing and anticipated efforts of federal, State, and local agencies to combat global warming, reduce air pollution, and protect public health, safety, and the environment; Address the global warming impacts of the Aliso Canyon methane leak; Involve specific actions (whether in the nature of funding or otherwise) to be taken by SoCalGas, and allow for ready verification of these actions; Yield real, verifiable, and permanent greenhouse gas emission reductions that are additional to those that would be achieved under a conservative "business as usual" scenario, including actions that SoCalGas already is taking, will otherwise be legally obligated to undertake, or voluntarily agreed to prior to the natural gas leak at Aliso Canyon...

...In addition to the necessary criteria related above, ARB recommends that other considerations also inform the selection of specific projects for the program. Specifically, the program should prioritize or otherwise encourage emission-reduction projects that: Involve substantial direct and indirect reductions in emissions of SLCPs, especially methane; Enhance the sustainability of the State's energy infrastructure, by decreasing reliance on fossil fuels or otherwise; Address the interests of disadvantaged California communities and communities directly impacted by the leak; or Provide other significant and demonstrable environmental, economic, and public health co-benefits...

...Promoting Sustainable Energy Infrastructure: As a secondary area of emphasis, ARB recommends that the mitigation program reduce emissions of SLCPs and other greenhouse gases through projects that would enhance the State's sustainable energy infrastructure, decrease reliance on fossil fuels, and promote energy efficiency and renewable energy resources. Examples of projects within this category include: o New or enhanced incentives or subsidies to replace appliances that consume fossil fuels (e.g., gas water heaters and furnaces) with devices or systems that rely on renewable energy...

...B. Program Concentration #1: Reducing Emissions in the Agriculture and Waste Sectors. ARB anticipates that within the mitigation program, projects within the agriculture and waste sectors will produce most of the emission reductions required for full mitigation of climate impacts...

Discussion:

There are several environmental justice issues with this proposed mitigation. First of all, the document concludes that most of the mitigation will come from the agriculture and waste sectors in the form of payments to these sectors to reduce their methane emissions. But, we believe these sectors must be mandated to reduce their methane emissions without subsidy. Otherwise, money which could be used to help environmental justice communities to reduce their reliance on fossil fuel energy is being used unfairly by gross industrial sized polluters in a very narrow way which does nothing to end the basic non-sustainability factors within these entities.

Although no cost totals are given, this plan seems to envision a mitigation fee of about \$12 per ton of CO₂e for the leak which totals 8.4 million tons. \$12 is the amount a ton of carbon emission allowances are selling for at the present time. This amount would produce a \$100 million mitigation fee which might be enough to induce 100 dairies, out of 1500 total, at a million dollars each, to install digesters on their lagoons and pipeline ready natural gas processing and cleaning equipment. Although the actual amount is unknown, a million dollars at each average dairy will probably be necessary. Dairies have proven they will not do this unless it is paid for completely, including maintenance costs. These digesters would collect about 15% of the total methane emissions at each one of these dairies. The total methane collected over ten years at these 100 dairies could reasonably reach the 100,000 tons of methane released in this leak.

But, the draft mitigation document seems to emphasize the idea that mitigation money could also be used to help low income households to reduce their reliance on fossil fuels. That section is highlighted in yellow above. Is the thinking here that perhaps one million dollars could be spent installing efficient, point-of-use, electric hot water heaters for both residents in the area of the leak and low income residents elsewhere? Unfortunately, the reductions in methane use, and consequential CO₂e emissions would be very minimal and not mitigate even 1% of the methane leak itself.

An alternative proposal:

There is no reason why the mitigation fee should be based on the minimal market fee of current carbon allowances which is around \$12 per ton. That type of fee would, basically, be business as usual for this natural gas supplier. Realistically, this huge leak of methane was avoidable. The mitigation fee should include a penalty which far surpasses the current Cap and Trade market cost of a ton of carbon emissions. Also, the proposed mitigation using methane reductions at dairies as the main method will greatly limit the ability of the state to mandate appropriate reductions of methane emissions at all dairies

while capturing only 1% of those emissions in the scenario described above. Dairies must do far more than that as their fair share of methane reductions needed by 2030 and beyond.

Far more appropriate would be a mitigation fee of \$100 per ton for the 8.4 million tons of CO₂e emissions from this leak. That amount could eliminate the need for natural gas use for heating and cooking at thousands of homes, both in the area of the leak and for low income residents elsewhere served by Southern California Gas.

\$800 million could totally eliminate the need for natural gas at 200,000 homes, including solar panels for covering the replacement electricity, with properly designed incentives. This would involve less than 1% of their total customer base. SoCalGas likely has annual revenues approaching 10 billion dollars annually. Their CEO earns over 16 million annually. Returning less than 10% of annual revenues to their customers, on a one time basis spread over several years for this horrendous environmental disaster likely caused by their own negligence, is not asking too much.

Each home served by Southern California Gas uses an average of .83 tons of methane annually. The burning of this methane creates 2.75 tons of CO₂ directly and a 3% leakage rate of methane through all the delivery and ignition systems causes another 2.5 tons of CO₂e. The total is a minimum, therefore, of 5 tons of CO₂e annually per household from natural gas use currently. Reducing this amount of CO₂e over ten years by using renewable energy from solar panels and electric heating and cooking devices in 200,000 homes would mitigate the 8.4 MMCO₂e emissions from this leak. If these homes, where the mitigation takes place, were 50% low income, the amount spent could be \$6,000 per low income home and \$2,000 for the others. The \$400 per year these residents are all paying currently for natural gas, on average, would be another \$4,000 in cost savings over ten years per household which can be spent on this new infrastructure. Existing incentives for low income residents and others to install solar panels would ensure this program is affordable and attractive to residents. Their savings would also continue past the ten year period.

Why not? This idea is a direct mitigation for the leak involving reductions in methane emissions from leakage and direct methane use. It satisfies completely, and more satisfactorily, the type of mitigation laid out in the draft mitigation paper.

Notes: It is assumed that burning 1 ton of methane produces 2.75 tons of CO₂. It is assumed that in the pipelines and delivery systems of natural gas to homes, and in the use of natural gas within homes, that there is a total 3% leakage rate of methane. It is assumed that households served by Southern California Gas use an average of .83 tons of methane annually or 442 therms which is 43,000 cubic feet.