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Comment Received From: David Bezanson, Ph.D.
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David Bezanson, PhD - Re Item 5 Local Ordinance Application

Additional submitted attachment is included below.

Hi California Energy Commission Staff,

ALL-ELECTRIC

REACH CODES FOR NEW BUILDINGS IN CA

Please establish a code for new buildings that prohibits installation of fossil fuel infrastructure, e.g., NG. Buildings generate about 15% of GHGs (more than the coal sector), accelerating climate change. All-electric buildings, and efficiency, significantly decrease the carbon footprint of buildings. This becomes more effective as we power our grid with higher percentages of clean energy that meets Renewable Portfolio Standards and timelines of SB100.

Building a 2,500 sq. ft. house in San Francisco containing NG infrastructure costs \$12,500 more than an all-electric house. Over the life of such an all-electric house, energy costs are \$9,000 less than costs for a NG-enabled house. All-electric buildings will help us provide more affordable housing, decrease costs of new government buildings - decreasing tax burdens, and increase profits of business (by decreasing their real estate costs). All-electric building codes are favored by electrical unions.

NG infrastructure, from extraction to combustion by consumers, is prone to leakage. Having such in areas of active seismic fault lines is hazardous. NG increases the risk of fires. We can prevent disasters like the 2010 NG pipelines explosion in San Bruno. NG is almost entirely methane, which traps 80 times more heat during the initial 20 years in the atmosphere. It gradually degrades into H₂O and CO₂. The latter has a half-life in the atmosphere of several centuries.

Common airborne emissions from NG appliances are listed below.

- * methane – causes shortness of breath and fatigue
- * formaldehyde – causes wheezing, fatigue, cancer, birth defects, chronic asthma
- * nitrogen oxides, e.g., nitrogen dioxide – causes chronic cardiovascular disease, chronic kidney disease, cancer, chronic respiratory disorders, acute respiratory infections
- * particulate matter including PM_{<2.5um} – causes preterm birth disorders, cancer, chronic kidney disease, chronic cardiovascular disorders, chronic neurodegenerative disorders, and exacerbates chronic respiratory disorders.

Those who live in areas where PM levels are high and who contract COVID-19 are more likely to die from the virus.

There is no lower threshold for the latter 2 emissions, below which there is no harm. I.e., any exposure inflicts some harm.

NG appliances and infrastructure that are in disrepair may emit dangerous levels of carbon monoxide.

Of the above 5 emissions, the only one that may be filtered out by an HVAC system is PM. To capture the most damaging size of PM (<2.5um), a HEPA filter is required.

The 650,000 miles of NG pipelines in CA are mostly over 40 years old. Over 1800 leaks are reported daily to 2 CA utilities. NG leaks, in the absence of combustion, load the

atmosphere with high-GWP methane. There are thousands of abandoned/idle unplugged wells in CA. A small percentage have been inspected and leaks are commonly detected. Of the over 100,000 plugged wells, many are leaking. Per Fracktracker, 80,000 are leaking. Of the over 100,000 active NG wells in CA, all release a) methane and toxic co-pollutants into the air, b) a proprietary slurry of over 1,000 synthetic chemicals into the well – which may pollute nearby surface water and aquifers.

The fossil fuel industry has consistently neglected self-regulation of its environmental impacts. It is unlikely that the industry will responsibly maintain NG infrastructure - jeopardizing public health.

The fossil fuel sector has been in decline for over 5 years by many measures. Its labor-force has been shrinking and, due to dwindling profitability, further furloughs are planned. In contrast, the renewable electricity and efficiency sector is growing new jobs at thrice the rate of the fossil fuel sector. The US fossil fuel sector is unsustainable for many financial reasons including stranded assets, litigation by governments, global divestment, cost parity with renewable energy, consumer preference for renewables, and the cost of production exceeding the sales price/bbl. (as of Sept. 5 WTI was trading slightly under \$40/bbl.) Improving the maintenance of its NG infrastructure is a low priority because it increases costs without increasing sales. For fiscal reasons, the industry's capability to maintain a safe infrastructure is failing.

In order to decelerate climate change, we need to completely phase out use of fossil fuels like NG. The sooner we accomplish this, the sooner we will benefit and the less it will cost. Nationwide polls indicate that over 70% of citizens prefer clean energy instead of dirty.

Please let me know if you wish further information.

<https://www.latimes.com/environment/story/2020-07-23/is-americas-biggest-gas-utility-fighting-climate-action-california-demands-answers>

<https://www.sightline.org/2020/07/28/public-opinion-is-moving-against-natural-gas-and-fracking/>

<https://www.reuters.com/article/us-usa-drilling-abandoned-specialreport/special-report-millions-of-abandoned-oil-wells-are-leaking-methane-a-climate-menace-idUSKBN23N1NL>

<https://www.drillednews.com/post/report-big-oil-hasn-t-saved-for-retirement-and-it-could-cost-states-billions>

<https://ehp.niehs.nih.gov/doi/full/10.1289/EHP5842>

<https://lpdd.org/>

Best Regards,

David Bezanson, Ph.D.
CA resident and voter