Methane and the California Satellite Methane Project

Methane

- Methane (CH_4) is a greenhouse gas responsible for 25% of global warming and 25 times more potent than carbon dioxide (CO_2) over a 100-year time frame.
- Methane is non-toxic, and the concentrations and conditions needed for it to pose a safety risk are rare.
- Other pollutants may be emitted alongside methane, raising important questions about potential health impacts. The type of copollutants, which vary by source, their concentration, how they disperse, and individuals' exposure all influence the potential for health impacts. We are considering ways to improve our understanding of potential presence and impacts of these co-pollutants.

California Satellite Methane Project

CARB is using the latest science and technology on satellites to identify large methane plumes in California. CARB will task the satellites to observe areas with the most potential for methane plumes, some of which may be near communities. All observed plumes will be shared publicly after 30 days, with urgent action taken for plumes that have characteristics indicating they could pose an immediate safety concern.

- CARB will be utilizing a new technology that allows us to detect, from space, methane levels in the atmosphere that are higher than normal, known as methane enhancements. These methane enhancements indicate a source of methane emissions nearby. Data will be provided to CARB by a commercial aerospace company that was selected through a competitive contract and procurement process.
- The California Satellite Methane Project (CalSMP) will provide CARB with regular images of methane plumes, rather than a one-time snapshot. That is because the satellite can pass over the plume with each orbit.
- Previous research conducted by CARB suggests that most plume observations will come from the following sectors: landfills, oil and gas infrastructure, and dairies. These sources have potential to emit methane in concentrated plumes large enough to be detected from space.
- CARB has integrated the technology into the oil and gas methane regulation and is considering its use in amendments to the landfill methane regulation.
- In the oil and gas regulation, operators are required to respond when CARB finds a plume at their site(s).
    - CARB will quickly notify operators when methane plumes are detected.
    - CARB will coordinate with state and local enforcement partners including the local air districts.
    - CARB will track the operator's response and repair of any leak.
    - Observations from subsequent satellite orbits will allow for verification that the leak has been stopped.
- Previous research suggests that many leaks can be fixed within 1-2 weeks of being detected by satellites. Observed plumes, their status, and the actions taken to-date will be made public 30 days after observation.

- In rare cases where a plume has large enough emissions and is in close enough proximity to nearby residents that it may pose a safety risk, CARB will work with local authorities to closely monitor the situation, and work with those entities on appropriate communication.
- CARB is initiating a community outreach effort through a grant process that may include selecting a third-party administrator to work with CARB and communities. The $5 million grant will be used to understand how to best work with local communities in CARB's California Satellite Methane Project, particularly when a plume is found close to a community.