



Summary of Petition for CARB to Regulate Livestock Methane

Urgency

Rapid reduction of methane will slow global warming and give us time to limit or at least delay 1.5°C total warming beyond 2029. There is international consensus that any pathway to limited warming *must* include deep methane reductions.

CARB Has Statutory Authority and an Obligation to Reduce Livestock Methane

Inexplicably, California has given a regulatory pass to the single biggest anthropogenic methane source: livestock.

Sources of methane (in MMT CO₂e per CARB inventory for 2020 using GWP₂₀) include

- Oil and gas extraction and delivery — 18.64. CARB regulates those emissions.
- Landfills — 20.24. CARB regulates those emissions.
- Livestock — 62.75. *These emissions are completely unregulated.*

That surprising gap in our climate program is all the more puzzling after the Legislature instructed CARB that it “shall adopt regulations to reduce methane emissions from livestock manure management ... by up to 40 percent below the dairy sector’s and livestock sector’s 2013 levels by 2030.” Subdivision (b)(2) instructs that CARB “shall” take three specified steps prior to adopting the regulations. By repeatedly using the word “shall,” the Legislature gave CARB no discretion regarding whether to adopt the regulations in time to achieve the 2030 target.

SB 1383 also specified the standard regulatory conditions to be met before regulations could take effect. For methane from manure, regulations must be feasible, cost-effective, not lead to “leakage,” and not achievable through voluntary measures. We believe each of these is demonstrated in this petition.

California is not on track to achieve the SB 1383 and Scoping Plan targets

The December 2023 Emissions Inventory reports that livestock emissions peaked in 2012 and by 2021 decreased 9.4%. If emissions continue to drop at 9.4% per decade, by 2030 there will be a reduction of less than 20% – nowhere close to the mandated 40% reduction.

Regulation of livestock facilities would also control air pollution in the heavily polluted Central Valley

Large dairies have many negative effects on human health as well as on air and water. In general, the main pollutants that affect health are ammonia, methane, particulate matter and hydrogen sulfide. Dairies are responsible for 21% of San Joaquin Valley ozone, which contributes to serious respiratory problems. Excess nitrogen, in the form of ammonia, is the

source of much of the air particulate and water pollution in the San Joaquin Valley. Manure management must form the backbone of attempts to address these problems.

Nitrous oxide is a potent global warming agent with a GWP₁₀₀ of 273. Application of fertilizer, including manure and digestate, is the main N₂O source. Agricultural nitrous oxide is clearly a greenhouse gas that should be reduced and controlled. Hydrogen sulfide results from stirring manure and is dangerous as well as causing the noxious odors community members suffer from. Digesters producing electricity are not required to reduce NO_x emissions by using a fuel cell or microturbine.

Methods exist for measuring methane emissions on an individual farm scale

University of California at Riverside researchers have developed a method of measuring methane emissions at each dairy using data from several existing but currently uncompiled sources.

Effective processes exist for reducing methane

The California Department of Food and Agriculture has determined that anaerobic digesters and a number of other methane reduction methods are effective. Even more effective would be moving away from the lagoon-based manure management system.

Recommendations for the Air Resources Board

1. Require in regulations that all dairies adopt *some* effective approach to mitigating methane.
2. Adopt a system of measuring emissions on all farms in order to determine overall methane emissions more accurately and to facilitate regulations.
3. Work with the Legislature to establish stable funding resources to help dairies exceed the minimum standard, using digesters and other measures that are otherwise beyond the capacity of farmers to finance.
4. Over the next twenty years, greatly reduce or eliminate wet or lagoon style management and replace it with “dry” management and affiliated methods.
5. Regulate the aspects of dairy greenhouse gas emissions that have special impacts. These include regulation of nitrous oxide, and regulation of fugitive emissions from digesters and “hot spots” of dairy methane emissions as well as criteria pollutants.
6. Provide technical assistance to dairies in the highly complex ways of managing manure and the ammonia, nitrous oxide, hydrogen sulfide, and methane it produces.
7. Regulate enteric emissions for all livestock if initial short-term pilot incentive programs do not show a high enough dairy uptake to produce a 20% reduction in enteric emissions by 2030 and 40% by 2040. CARB would set out a schedule for voluntary uptake; and regulate to that schedule if it is not met.

The full petition is available [here](#).