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Submitted via ca.gov

Mary D. Nichols, Chairperson
California Air Resources Board
1001 I Street #2828
Sacramento, CA 95814

RE: COMMENTS IN OPPOSITION TO TIER 2 PATHWAY APPLICATION NO. B0096

Dear Chairperson Nichols:

Pursuant to Cal. Code Regs. tit. 17, § 95488.7(d)(5), the undersigned organizations submit the following comments in opposition to the above-referenced application for certification of a Tier 2 pathway for biomethane. The biomethane would originate from Dairy Dreams LLC, a dairy concentrated animal feeding operation (CAFO) in Wisconsin. CAFOs are a component of the industrial animal agriculture system—one of the largest global contributors to climate change and pollution. As wildfires continue to rage in California and throughout the west, it is incumbent upon the California Air Resources Board (CARB) to prevent environmentally destructive CAFOs from exploiting and profiting from the Low Carbon Fuel Standard (LCFS) program, which exists to mitigate climate change and pollution.

CARB should reject the application because it is fatally flawed, both factually and methodologically, and because to do otherwise would undermine the purpose of the LCFS program. First, important factual information is omitted or redacted in the application, rendering meaningful stakeholder review of its claims impossible. Second, the application fails to employ a methodologically sound life cycle analysis that accounts for the greenhouse gas (GHG) emissions that result from the applicant's production of biomethane. Finally, granting the application would incentivize the CAFO industry to further expand and proliferate, increasing air pollution, accelerating climate change, further degrading water quality and quantity, and harming community health. Accordingly, we urge CARB to reject the application.

I. COMMENTERS

The **Animal Legal Defense Fund** (ALDF) is a national nonprofit organization based in California with over 300,000 members and supporters nationwide. ALDF's mission is to protect the lives and advance the interests of animals through the legal system. Advocating for effective oversight and regulation of the animal agriculture industry across the United States is one of ALDF's central goals, which it achieves by filing lawsuits, administrative comments, and rulemaking petitions to increase legal protections for animals; supporting strong animal protection legislation; and fighting legislation (like state "ag gag" laws) that harms animals and CAFO-occupied communities. Through these efforts, ALDF seeks to ensure accountability and transparency in the CAFO system, which is paramount to its ability to protect farmed animals and ALDF members from the immensely harmful effects of CAFOs.

The **Association of Irritated Residents** (AIR) is a nonprofit, public interest organization based in California with members in Kern, Tulare, Kings, Fresno, and Stanislaus Counties. AIR formed in 2001 to advocate for clean air and environmental justice in the San Joaquin Valley.

II. BACKGROUND

A. The Low Carbon Fuel Standard Program

The 2006 California Global Warming Solutions Act called for the state to reduce GHG emissions to fight climate change, and made clear that state efforts to reduce GHG emissions should not compromise or conflict with efforts to reduce air pollution.[1] In 2007, then-Governor Schwarzenegger signed Executive Order S-1-07, which declared GHG emissions a "serious threat" to the environment and human health.[2]

CARB, which is responsible for reducing GHG emissions,[3] adopted the LCFS regulation in 2009, and began implementing it in 2011.[4] "The LCFS is a key part of a comprehensive set of programs in California to cut GHG emissions and other smog-forming and toxic air pollutants," and the program exists to reduce the GHG emissions that cause climate change.[5] The bedrock of the LCFS program is "the principle that each fuel has '***life cycle***' [GHG] emissions that include CO_2, CH_4, N_2O, and other GHG contributors."[6]

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1 Cal. Health & Safety Code §§ 38500–38599.

2 Executive Order S-1-07 (Jan. 18, 2007).

3 Cal. Health & Safety Code § 38510.

4 *Low Carbon Fuel Standard*, CAL. AIR. RES. BD., https://ww2.arb.ca.gov/our-work/programs/low-carbon-fuel-standard/about (last visited Sep. 20, 2020).

5 *Id.*

6 *Id.* (emphasis added).

B. Concentrated Animal Feeding Operations

CAFOs—also known as factory farms—are industrial-scale agricultural facilities that keep hundreds to thousands of animals in cruel, high-density confinement.[7] CAFOs deplete water quantity and produce vast amounts of animal manure[8] and emissions (including GHG) that spur climate change and significantly degrade air and water quality.[9] These environmental effects harm human health,[10] particularly in communities with "minority" and low-income populations,[11] where CAFOs are disproportionately sited.[12] CAFOs and their environmental effects also harm animals, including farmed animals and wild animals who are members of endangered and threatened species.[13]

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7 CARRIE HRIBAR, NAT'L ASSOC. OF LOCAL BDS. OF HEALTH, UNDERSTANDING CONCENTRATED ANIMAL FEEDING OPERATIONS AND THEIR IMPACTS ON COMMUNITIES 1 (2010), CENTERS FOR DISEASE CONTROL AND PREVENTION, https://www.cdc.gov/nceh/ehs/docs/understanding_cafos_nalboh.pdf.

8 "Underlying all of the environmental problems associated with CAFOs is the fact that too much manure accumulates in restricted areas." EPA, *Risk Assessment Evaluation for Concentrated Animal Feeding Operations* 2 (May 2004); *see id.* at 9 (stating that a dairy CAFO with one thousand cows produce the same amount of waste as a city of 164,500 humans).

9 Hribar, *supra* note 7, at 2–11.

10 *Id.*

11 *See, e.g.*, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, Exec. Order No. 12,898, 3 C.F.R. 859 (1995), *reprinted as amended in* 42 U.S.C. § 4321 (1998).

12 *See* Jan. 12, 2017 EPA External Civil Rights Compliance Office Letter of Concern to N.C. Dep't of Envtl. Quality (describing discriminatory health and quality of life impacts from pig and poultry CAFOs), https://www.epa.gov/sites/production/files/2018-05/documents/letter_of_concern_to_william_g_ross_nc_deq_re_admin_complaint_11r-14-r4_.pdf; Kelley J. Donham et al., *Community Health and Socioeconomic Issues Surrounding Concentrated Animal Feeding Operations*, 115 ENVTL. HEALTH PERSP. 317 (2007); Steve Wing et al., *Environmental Injustice in North Carolina's Hog Industry*, 108 ENVTL. HEALTH PERSP. 225 (2000).

13 ENVIRONMENTAL IMPACT OF INDUSTRIAL FARM ANIMAL PRODUCTION 30 (2008), PEW COMMISSION ON INDUSTRIAL FARM ANIMAL PRODUCTION, http://www.pcifapia.org/_images/212-4_EnvImpact_tc_Final.pdf; LIVESTOCK'S LONG SHADOW: ENVIRONMENTAL ISSUES AND OPTIONS 196, 209, 273 (2006), UNITED NATIONS FOOD AND AGRICULTURE ORGANIZATION, http://www.fao.org/3/a0701e/a0701e.pdf.

1. CAFO emissions spur climate change, degrade air quality, and harm human health.

CAFOs produce emissions that fuel climate change[14] and diminish ambient air quality.[15] These emissions include four hundred different volatile organic compounds, particulate matter, methane, ammonia, hydrogen sulfide, ozone, endotoxins, and noxious odors.[16] CAFOs produce nearly 75% of the United States' ammonia air pollution.[17]

These emissions are so concentrated that it can be dangerous even to approach a waste lagoon—particularly in hot summer months.[18] "The oxygen-deficient, toxic, and/or explosive atmosphere which can develop in a manure pit has claimed many lives."[19] There are multiple incidents of farm workers approaching lagoons to make repairs and succumbing to fatal emissions; some died from hydrogen sulfide poisoning,

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[14] R.M. Duren et al., *California's methane super-emitters*, 575 NATURE 180 (Nov. 7, 2019) (results of a study finding that California dairy CAFOs contribute 26% of all of California's point-source methane emissions—more than the oil and gas sector); C. Alan Rotz, *Modeling Greenhouse Gas Emissions from Dairy Farms*, 101 J. OF DAIRY SCI. 6675, 6675 (2018), https://www.journalofdairyscience.org/action/showPdf?pii=S0022-0302%2817%2931069-X ("Dairy farms have been identified as an important source of greenhouse gas emissions. Within the farm, important emissions include enteric CH_4 from the animals, CH_4 and N_2O from manure in housing facilities during long-term storage and during field application, and N_2O from nitrification and denitrification processes in the soil used to produce feed crops and pasture."); Hribar, *supra* note 7, at 7; CAFO SUBCOMM. OF THE MICH. DEP'T OF ENVTL. QUALITY TOXICS STEERING GRP., CONCENTRATED ANIMAL FEEDLOT OPERATIONS (CAFOS) CHEMICALS ASSOCIATED WITH AIR EMISSIONS 8 (May 10, 2006).

[15] Hribar, *supra* note 7, at 3.

[16] *See* ROBBIN MARKS, CESSPOOLS OF SHAME: HOW FACTORY FARM LAGOONS AND SPRAYFIELDS THREATEN ENVIRONMENTAL AND PUBLIC HEALTH 1, 17 (July 2001), https://www.nrdc.org/sites/default/files/cesspools.pdf; *see also* Sarah C. Wilson, Comment, *Hogwash! Why Industrial Animal Agriculture is Not Beyond the Scope of Clean Air Act Regulation*, 24 PACE ENVTL. L. REV. 439, 441 (2007) (highlighting the health impacts of such emissions).

[17] *CAFOs Ordered to Report Hazardous Pollution*, WATERKEEPER ALLIANCE (Apr. 11, 2017), http://waterkeeper.org/cafos-ordered-to-report-hazardous-pollution/.

[18] Marks, *supra* note 16, at 26.

[19] *NIOSH Warns: Manure Pits Continue to Claim Lives*, CENTERS FOR DISEASE CONTROL AND PREVENTION (July 6, 1993), https://www.cdc.gov/niosh/updates/93-114.html.

while others asphyxiated in the oxygen-starved air.[20] Others died after collapsing during rescue attempts.[21]

But it is not necessary to be near a lagoon to suffer health effects from the emissions. One study showed that people in CAFO-occupied communities "suffered disproportionate levels of tension, anger, confusion, fatigue, depression, and lack of overall vigor as well as more upper respiratory and gastrointestinal ailments than neighbors of other types of farms and non-livestock areas."[22] Ammonia is a "strong respiratory irritant" that causes chemical burns to the respiratory tract, skin, and eyes.[23] It also causes severe coughing and chronic lung disease.[24] Hydrogen sulfide is acutely dangerous, causing "inflammation of the moist membranes" in the eyes and respiratory tract as well as olfactory neuron loss, pulmonary edema, and even death.[25] Particulate matter causes "chronic bronchitis, chronic respiratory symptoms, declines in lung function, [and] organic dust toxic syndrome."[26]

2. CAFOs degrade water quantity and quality, which harms human health.

CAFOs consume "a massive amount of water" for various operational purposes, such as flushing manure from barns and watering animals.[27] Pig and dairy CAFOs are particularly water intensive.[28] For example, one mother pig and twenty piglets in a pig CAFO would require approximately 14,000 gallons of drinking water and nearly 55,000 gallons of flushing water per year.[29] A single dairy in Oregon, Lost Valley Farm, was expecting to use close to one million gallons of water each day before the state shuttered it for hundreds of permit violations and massive environmental degradation.[30] "Because of this demand for water, CAFOs tend to seek sites above

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20 Marks, *supra* note 16, at 19.

21 *See id.* at 26.

22 Wilson, *supra* note 16, at 445 n.45.

23 CAFO Subcomm., *supra* note 14, at 4.

24 Hribar, *supra* note 7, at 6.

25 *Id.*; CAFO Subcomm., *supra* note 14, at 4.

26 Hribar, *supra* note 7, at 6.

27 *See* WILLIAM J. WEIDA, CONCENTRATED ANIMAL FEEDING OPERATIONS AND THE ECONOMICS OF EFFICIENCY 22 (Mar. 19, 2000), https://www.sraproject.org/wp-content/uploads/2017/10/cafosandtheeconomicsofefficiency.pdf; *see* Faith Cullens, *Water use on dairy farms*, MICH. STATE. U. https://www.canr.msu.edu/news/water_use_on_dairy_farms (noting that agriculture uses 70% of fresh water).

28 *See* Hribar, *supra* note 7, at 8.

29 Weida, *supra* note 27, at 22.

30 *See* Tracy Loew, *State officials let mega-dairy use loophole to tap endangered Oregon aquifer*, STATESMAN JOURNAL (Mar. 22, 2018), https://www.statesman

major aquifers [and] water is essentially treated as a free good after it is removed from the ground."[31]

CAFOs also pollute surface water and groundwater via lagoon breaches, seeps, and leaks; catastrophic flooding; and sprayfield runoff.[32] Contaminants in manure include nitrates and pathogens,[33] as well as ammonium, phosphate, dissolved solids, metals and metalloids, pharmaceutical chemicals, and natural and synthetic hormones.[34] Pathogens are parasites, bacteria, and viruses capable of causing disease or infection in animals or humans, and there are one hundred and fifty different pathogens in manure capable of affecting human health.[35] Metals and metalloids include copper, zinc, arsenic, nickel, and selenium.[36] Pharmaceutical chemicals include antibiotics, and hormones include estrogen.[37]

The health impacts of polluted water are serious, particularly for those who have weakened immune systems. Symptoms of illnesses caused by contaminated water include "nausea, vomiting, fever, diarrhea, muscle pain, death," and kidney failure.[38] Nitrate is a particularly serious health hazard—people who drink water polluted with nitrate bear an increased risk of colon, kidney and stomach cancers, among other things.[39] People at high risk of illness or death constitute approximately 20% of the United States population, and they include elders, infants, children, and those who are pregnant, HIV positive, on chemotherapy, or are otherwise immuno-suppressed.[40]

In addition to pathogen-driven illnesses, CAFOs also breed new viruses and generate pandemics. When the U.S. Centers for Disease Control and Prevention (CDC) sequenced the DNA of the swine flu that killed thousands of Americans in 2009, they

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journal.com/story/tech/science/environment/2018/03/22/lost-valley-mega-dairy-oregon-used-loophole-tap-aquifier-allowed-state-officials/426738002/.

31 Weida, *supra* note 27, at 22; *see* Loew, *supra* note 30 (describing how Lost Valley Farm, a former dairy CAFO located approximately twelve miles from Threemile Canyon Farms, exploited a legal loophole to extract water from an overdrawn aquifer).

32 *Id.* at 4.

33 Wing et al., *supra* note 12, at 225.

34 STEPHEN R. HUTCHINS ET AL., CASE STUDIES ON THE IMPACT OF CONCENTRATED ANIMAL FEEDING OPERATIONS (CAFOS) ON GROUND WATER QUALITY 7–8 (2012).

35 Hribar, *supra* note 7, at 8–9.

36 Hutchins et al., *supra* note 34, at 9.

37 *Id.* at 9–13.

38 Hribar, *supra* note 7, at 10.

39 *Nitrate*, NAT'L CANCER INST. (Mar. 2020), https://progressreport.cancer.gov/prevention/nitrate.

40 Hribar, *supra* note 7, at 4.

traced its origin to a single North Carolina pig CAFO.[41] The CDC estimates that the 2009 swine flu pandemic sickened 60.8 million Americans, hospitalized 274,304, and killed 12,469, including more than a thousand children.[42] Though both COVID-19 and SARS likely originated in live animal markets,[43] they could have originated in CAFOs due to their similar conditions—and the next pandemic very well may.[44]

Finally, there are often antibiotics in CAFO animal feed.[45] Seventy percent of all antibiotics used in the United States are administered to farmed animals as feed additives.[46] CDC has recommended that the use of antibiotics in "food animals" be "phased out."[47] These antibiotics are dangerous because "[t]he antibiotics often are not fully metabolized by animals, and can be present in their manure. If manure pollutes a water supply, antibiotics can also leech into groundwater or surface water."[48] The risk

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41 Gavin J. D. Smith, et al., *Origins and Evolutionary Genomics of the 2009 Swine-origin H1N1 Influenza of Epidemic*, 459 NATURE 1122 (2009); Bernice Wuethrich, *Chasing the Fickle Swine Flu*, 299 SCIENCE 1502 (2003).

42 Sundar S. Shrestha et al., *Estimating the Burden of 2009 Pandemic Influenza of (H1N1) in the United States (April 2009–April 2010)*, 52 CLINICAL INFECTIOUS DISEASES S75–82 (2011).

43 Aylin Woodward, *Both the new coronavirus and SARS outbreaks likely started in Chinese wet markets,* BUS. INSIDER (Feb. 26, 2020), https://www.businessinsider.com/wuhan-coronavirus-chinese-wet-market-photos-2020-1 (discussing the potential for zoonotic diseases to jump from animals to humans).

44 ANIMAL LEGAL DEFENSE FUND, COVID-19 AND ANIMALS: RETHINKING OUR RELATIONSHIP WITH ANIMALS TO REDUCE THE LIKELIHOOD OF THE NEXT GLOBAL PANDEMIC 9, (June 2020), https://aldf.org/wp-content/uploads/2020/06/White-Paper-COVID-19-and-Animals.pdf ("A variety of factors contributed to the development and spread of COVID-19 and aggravate humanity's risk from further zoonotic diseases . . . . The common thread binding all risk factors, however, is our exploitation of both animals and the natural environment we share with them.").

45 Hribar, *supra* note 7, at 10; *Antibiotic Resistance Threats in the United States*, CENTERS FOR DISEASE CONTROL AND PREVENTION 11 (2013), https://www.cdc.gov/drugresistance/threat-report-2013/pdf/ar-threats-2013-508.pdf#page=6; *see* Mary J. Gilchrist et al., *The Potential Role of Concentrated Animal Feeding Operations in Infectious Disease Epidemics and Antibiotic Resistance*, 115 ENVTL. HEALTH PERSPECTIVES 313, 313–14 (2006).

46 Hribar, *supra* note 7, at 10; *see* Gilchrist et al., *supra* note 45, at 313 (noting that estimates suggest up to 87% of all antibiotic use in the United States is for livestock animals).

47 CDC, *supra* note 45, at 11.

48 Hribar, *supra* note 7, at 10.

to public health is high because this exposure causes antibiotics to be less effective for humans while also leading to the development of antibiotic-resistant microbes.[49]

3. CAFOs disproportionately harm communities of color and low-income communities.

Environmental justice communities suffer disproportionately from both the environmental and the economic impacts of factory farms.[50] A study of the vertically integrated hog farm industry in North Carolina, for example, found that there were "18.9 times as many hog operations in the highest quintile of poverty as compared to the lowest," and that such operations were "5 times as common in the highest three quintiles of the percentage nonwhite population as compared to the lowest."[51] Individuals suffering adverse health impacts from CAFOs include not only members of local communities of color and low-income communities, but also CAFO workers themselves, of whom a large number are undocumented and/or people of color.[52] Moreover, rural communities face significant health disparities that are exacerbated by the presence of CAFOs,[53] and COVID-19 is revealing just how disparate health services and outcomes are in these rural communities when compared to urban populations.[54]

4. CAFOs harm animals, including those who are members of endangered and threatened species.

CAFOs harm farmed animals by subjecting them to extreme, high-density confinement. These conditions increase the confined animals' susceptibility to injury,

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[49] *Id.* (citing Marc Kaufman, *Worries Rise Over Effect of Antibiotics in Animal Feed: Humans Seen Vulnerable to Drug-Resistant Germs*, WASH. POST, A01 (Mar. 17, 2000), http://www.washingtonpost.com/wp-srv/WPcap/2000-03/17/071r-031700-idx.html (explaining that eating the flesh of animals who have been fed antibiotics further increases one's risk of developing antibiotic resistance)).

[50] Steve Wing and Jill Johnson, *Industrial Hog Operations in North Carolina Disproportionately Impact African-Americans, Hispanics and American Indians*, UNIVERSITY OF NORTH CAROLINA (2014), http://www.ncpolicywatch.com/wp-content/uploads/2014/09/UNC-Report.pdf; Wing et al., *supra* note 12, at 225.

[51] Wing et al., *supra* note 12, at 225.

[52] *Factory Farm Workers*, FOOD EMPOWERMENT PROJECT, https://foodispower.org/factory-farm-workers/ (last visited Sep. 19, 2020).

[53] *See generally,* Virginia Guidry et al., *Connecting Environmental Justice and Community Health*, 79 N.C. Med. J. 5, 324–28 (Sept. 10, 2018), https://www.ncmedicaljournal.com/content/79/5/324.full.

[54] Liz Essley Whyte and Chris Zubak-Skees, *Underlying Health Disparities Could Mean Coronavirus Hits Some Communities Harder*, NPR (Apr. 1, 2020), https://www.npr.org/sections/health-shots/2020/04/01/824874977/underlying-health-disparities-could-mean-coronavirus-hits-some-communities-harder.

illness, and disease.[55] For example, chicken crowding causes footpad dermatitis, bruising, and other injuries.[56] Likewise, gestation crates, which are not even big enough for a pig to turn around in, cause pigs to experience musculoskeletal problems.[57] In addition, the animals generate massive amounts of waste, causing ammonia emissions to fill the warehouses in which the animals are confined, and causing the animals to suffer painful skin, lung, and eye damage.[58] These are only a small sampling of the ways in which CAFOs harm the animals they confine.

CAFOs also produce pollution and engage in land use practices that harm wildlife, including animals who are members of endangered and threatened species. For example, CAFOs harm aquatic biodiversity by degrading habitat, reducing species fertility, causing species mutation, increasing mortality, changing natural food resources, and generating expansion of nonnative species, often at the expense of native populations.[59] CAFOs harm terrestrial biodiversity by restricting genetic diversity, limiting or eliminating habitat (including forest, grassland, and wetland habitat),[60] "increas[ing] vulnerability to large-scale damage by pests,"[61] and introducing invasive species, including the farmed animals.[62] CAFO air emissions further harm terrestrial and aquatic biodiversity by harming wildlife health and population numbers, and by changing species migration patterns, altering vegetative growth rates, and causing species extinction through climate change.[63]

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55 THE CRITICAL RELATIONSHIP BETWEEN FARM ANIMAL HEALTH AND WELFARE 7 (2018), ANIMAL WELFARE INSTITUTE, https://awionline.org/sites/default/files/uploads/documents/FA-AWI-Animal-Health-Welfare-Report-04022018.pdf.

56 *Id.*

57 *Id.*

58 *Id.*

59 Pew Comm'n on Industrial Farm Animal Prod., *supra* note 13; U.N. Food and Agri. Org., *supra* note 13, at 196, 209, 273.

60 U.N. Food and Agri. Org., *supra* note 13, at 187.

61 Pew Comm'n on Industrial Farm Animal Prod., *supra* note 13, at 30.

62 U.N. Food and Agri. Org., *supra* note 13, at 197.

63 *Id.* at 187, 195–96.

III. METHANE DIGESTERS ARE FALSE SOLUTIONS.

Methane digesters are one of the ways in which CAFOs attempt to "greenwash" the environmentally destructive practices inherent in their business model.[64]

But methane digesters are ineffective, inefficient, and dirty energy sources, much like the fossil fuels the LCFS program seeks to displace. First, they do nothing to abate the applicant's unregulated air emissions, including the enteric emissions that comprise approximately half of all dairy emissions.[65] Second, they do not capture all of the methane they produce, and some amount escapes as emissions.[66] Such "fugitive methane" cuts into the reductions in GHG emissions that digesters claim to offer.[67] Third, "when digesters burn methane, they release [other GHGs] like carbon dioxide and nitrogen oxide, which contribute[] to smog" and climate change.[68] Fourth, digesters do nothing to abate the applicant's water pollution or other adverse environmental impacts. Fifth, "[d]igesters require significant energy to collect, pump and truck manure to and from the digester and to heat the manure once it is in the digester. As much as half of the energy produced from digesters may be needed to operate the digester itself."[69] Finally, digesters have the potential to spill or leak manure—and they may even explode.[70]

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64 Bruce Watson, *The troubling evolution of corporate greenwashing*, THE GUARDIAN (Aug. 20, 2016), https://www.theguardian.com/sustainable-business/2016/aug/20/greenwashing-environmentalism-lies-companies (explaining that the term "greenwashing" was coined by environmentalist Jay Westerveld in 1986 to describe how corporations "present themselves as caring environmental stewards, even as they [commit] environmentally unsustainable practices").

65 Research indicates that "enteric emissions are normally the largest source of greenhouse gas on a dairy farm. On well-managed confinement farms, they contribute about 45% of the total GHG emission of the full farm system. . . ." Rotz, *supra* note 14, at 6677.

66 *See* FOOD AND WATER WATCH, HARD TO DIGEST: GREENWASHING MANURE INTO RENEWABLE ENERGY 3 (Nov. 2016), https://www.foodandwaterwatch.org/sites/default/files/ib_1611_manure-digesters-web.pdf.

67 *Id.*

68 *Id.*

69 *Id.*

70 *Id.* at 2 ("Just like manure lagoons without any methane capture system, digesters may accidentally spill or leak liquid manure and also present environmental risks from explosions associated with methane production. A 1.25 million gallon manure digester in Wisconsin, constructed in part with public funds, spilled 380,000 gallons of manure into nearby waterways in 2013, then another 22,000 gallons in 2014. The digester then experienced a major methane explosion.").

IV. GRANTING THE APPLICATION—WHICH IS FATALLY FLAWED BECAUSE IT IS FACTUALLY INCOMPLETE AND METHODOLOGICALLY UNSOUND—WOULD UNDERMINE THE PURPOSE OF THE LCFS PROGRAM.

A. Important factual information is omitted or redacted in the application, rendering meaningful stakeholder review of its claims impossible.

Publicly posted application materials "must provide sufficient information to allow for meaningful stakeholder review."[71] The application fails to conform to this requirement.

The applicant omits information about the CAFO that is necessary for stakeholders to perform a meaningful review of its claims. For example, the applicant fails to include the number of cows whose manure is being used as feedstock, the total amount of manure generated, the total amount of manure being used as feedstock, GHG emissions from the cows, GHG emissions resulting from manure stored and applied to land, and GHG emissions resulting from operations to feed, water, and transport the cows.

The application also omits critical information about the environmental and community health impacts of the CAFO that generates the feedstock manure. For example, this CAFO has allowed a 50,000-gallon manure spill from a lagoon overflow; seven other manure spills totaling at least 24,500 gallons; and at least one groundwater discharge.[72] These practices contribute to the dangerous levels of nitrates, coliform bacteria, and other dangerous pollutants in the waters of Kewaunee County, Wisconsin, where this CAFO is located.[73] "This manure and its components, including bacteria, nitrate and harmful illness-causing pathogens, create a public health hazard for more than 100,000 families . . . ."[74]

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[71] CAL. AIR. RES. BD., LOW CARBON FUEL STANDARD (LCFS) GUIDANCE 20-05 1 (Apr. 2020), https://ww2.arb.ca.gov/sites/default/files/classic//fuels/lcfs/guidance/lcfsguidance_20-05_ADA.pdf.

[72] *California Cap-and-Trade Program Summary*, SOC. RESPONSIBLE AGRIC. PROJECT, https://sraproject.org/2020/09/california-cap-and-trade-program-summary/ (last visited Sep. 26, 2020); SOC. RESPONSIBLE AGRIC. PROJECT, DAIRY DREAMS LLC, https://www.sraproject.org/wp-content/uploads/2015/11/SRAP-Webready-dairy-dreams-llc.compressed.pdf (last visited Sep. 27, 2020).

[73] Sarah Whites-Koditschek and Coburn Dukehart, *Most nitrate, coliform in Kewaunee County wells tied to animal waste*, THE CAP TIMES (Mar. 1, 2019), https://madison.com/ct/news/local/environment/most-nitrate-coliform-in-kewaunee-county-wells-tied-to-animal-waste/article_a67e420b-2322-5f0a-b1e3-40a13ed0560d.html.

[74] *Id.*

Other portions of the application are also opaque. Indeed, vast swathes of critical information—including *entire pages*—are redacted, as depicted below:

IV. Modified Tier 1 Calculator Output

Table 1 shows the CI results for the CNG produced by Calumet-Dairy Dreams. The CI of this pathway is -532.74g CO_2e MJ^{-1}.

Table 1: Emissions (g CO_2e MJ^{-1}) from CNG produced by Calumet-Dairy Dreams, separated by life cycle stage. Figures are rounded.

Stage of life-cycle	CI (g CO_2e MJ^{-1})
Manure handling and AD	[redacted]
Biogas upgrading	[redacted]
Biomethane flaring	[redacted]
Fugitive	[redacted]
Truck Transport	[redacted]
Transmission	[redacted]
Compression	3.50
tailpipe	60.73
Avoided emissions credits	[redacted]
Total	**-532.74**

III. RNG Plant Process Description

[redacted]

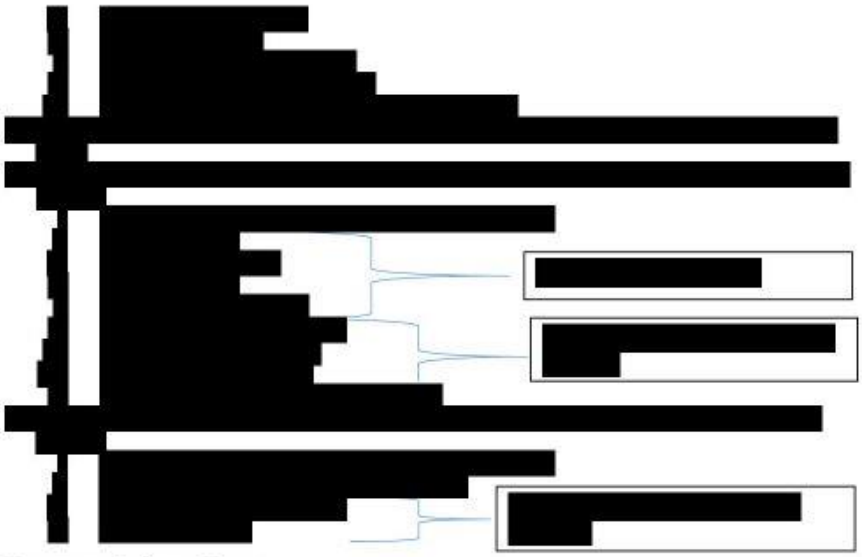
[redacted]

IV. Summary of Gas Collection and Injection

[redacted]

V. Metering/Monitoring Plan

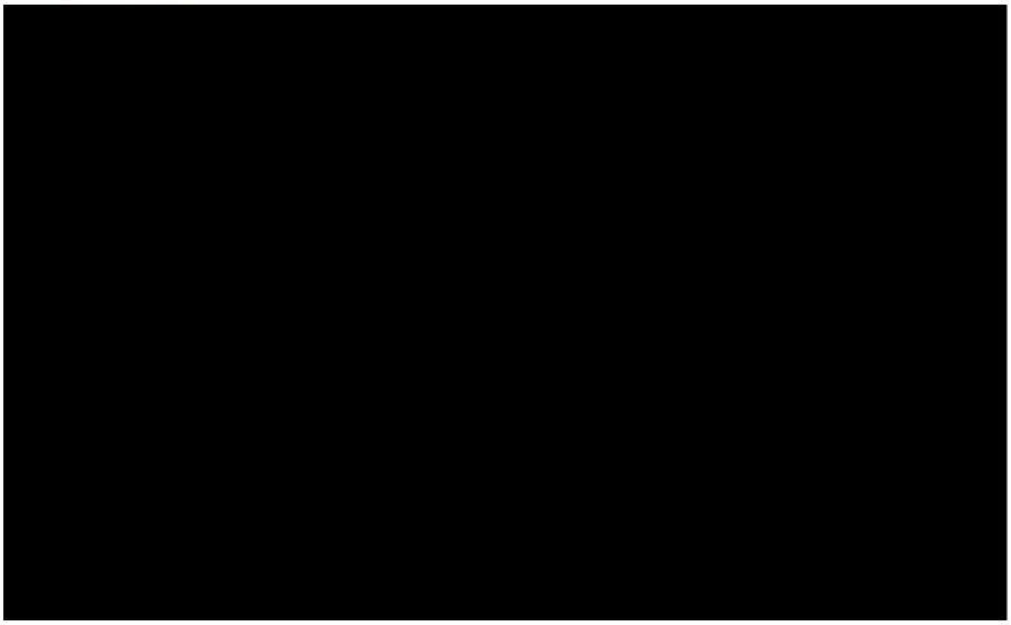
[redacted]



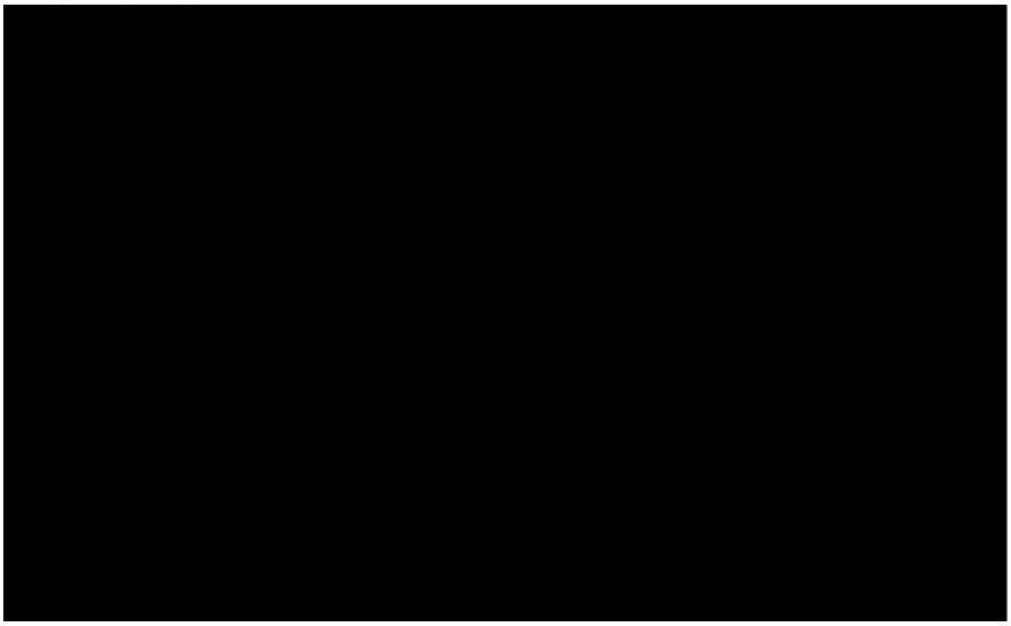
VI. Downstream Production Process

Dairy Dreams Gas Processing System

Dairy Dreams Tox & Flare



Dairy Dreams Tox & Flare

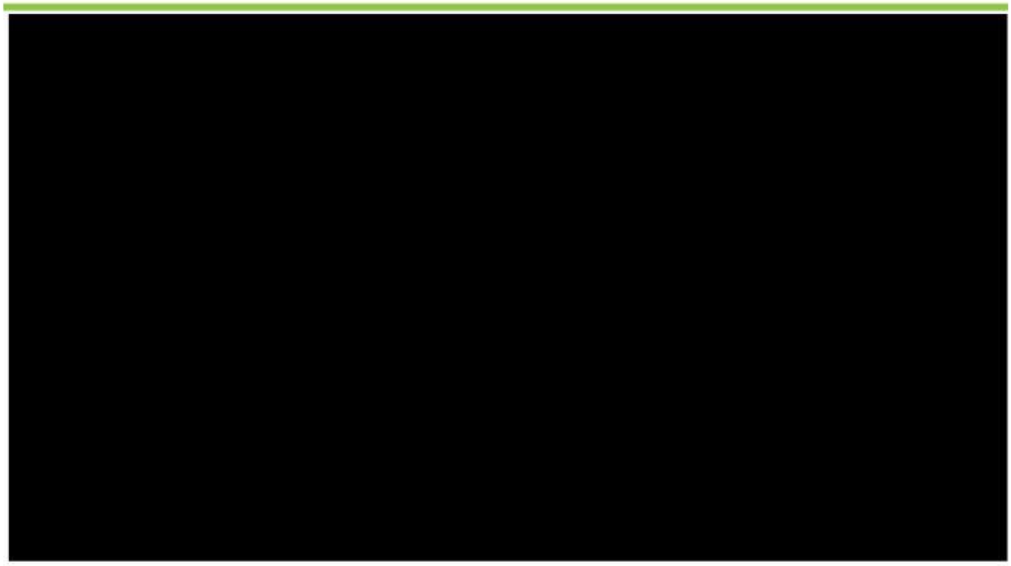


Dairy Dreams Truck Loading

Dairy Dreams & Ponderosa Truck Unloading / Pipeline Injection

Pagel's Ponderosa/Dairy Dreams Metering Setup

DTE Biomass Energy



Maple Leaf/Grotegut Interconnect Metering Setup

DTE Biomass Energy

[redacted]

Cells	Data input		Note	Primary Data Source	Secondary Data Source	Additional Data Source
Manure to Biogas (LOP Inputs) tab						
C8 to C19	L1.1.5 **Reporting Month (MM/YYYY)**	[redacted]	[redacted]			
D8 to D19	L1.1.6 **Livestock Population**	Varies	[redacted]	F le Calumet He d Count Summa y 3.21.2020	F les Da y Comp Mon to Repo ts	
G8 to G19	L1.1.9 **Average Temperature**	Varies	[redacted]	Folde Monthly Tempe atu e Data		
I8 to I19	L1.1.11 **Fraction of Volatile Solids Sent to Anaerobic Storage/Treatment System**	[redacted]	Basel ne scena o, see Cap and T ade Repo ts fo efe ence	Folde Cap and T ade documents	F le Basel ne Manu e Management Plan	
K8 to K19	L1.1.13 **Retention Time and Drainage**	Varies	[redacted]	Folde Cap and T ade documents	F le Basel ne Manu e Management Plan	
L8	L1.1.14 **Carryover from Previous Month**	[redacted]	[redacted]	F le t e 1-dsm-calculato -co ected to calculate 2018 to 2019 Jan ca yove fo DD 08062020		
R8 to R19	L1.2.6 **Livestock Population**	Varies	[redacted]	F le Calumet He d Count Summa y 3.21.2020	F les Da y Comp Mon to Repo ts	
U8 to U19	L1.2.9 **Average Temperature**	Varies	[redacted]	Folde Monthly Tempe atu e Data		
W8 to W19	L1.2.11 **Fraction of Volatile Solids Sent to Anaerobic Storage/Treatment System**	[redacted]	Basel ne scena o, see Cap and T ade Repo ts fo efe ence	Folde Cap and T ade documents	F le Basel ne Manu e Management Plan	
Y8 to Y19	L1.2.13 **Retention Time and Drainage**	Varies	Basel ne scena o, see Cap and T ade Repo ts fo efe ence	Folde Cap and T ade documents	F le Basel ne Manu e Management Plan	
Z8	L1.2.14 **Carryover from Previous Month**	[redacted]	[redacted]	F le t e 1-dsm-calculato -co ected to calculate 2018 to 2019 Jan ca yove fo DD 08062020		
AF8 to AF19	L1.3.6 **Livestock Population**	Varies	[redacted]	F le Calumet He d Count Summa y 3.21.2020	F les Da y Comp Mon to Repo ts	
AI8 to A 19	L1.3.9 **Average Temperature**	Varies	[redacted]	Folde Monthly Tempe atu e Data		
AK8 to AK19	L1.3.11 **Fraction of Volatile Solids Sent to Anaerobic Storage/Treatment System**	[redacted]	Basel ne scena o, see Cap and T ade Repo ts fo efe ence	Folde Cap and T ade documents	F le Basel ne Manu e Management Plan	
AM8 to AM19	L1.3.13 **Retention Time and Drainage**	Varies	Basel ne scena o, see Cap and T ade Repo ts fo efe ence	Folde Cap and T ade documents	F le Basel ne Manu e Management Plan	
AN8	L1.3.14 **Carryover from Previous Month**	[redacted]	[redacted]	F le t e 1-dsm-calculato -co ected to calculate 2018 to 2019 Jan ca yove fo DD 08062020		
AT8 to AT19	L1.4.6 **Livestock Population**	Varies	[redacted]	F le Calumet He d Count Summa y 3.21.2020	F les Da y Comp Mon to Repo ts	
AW8 to AW19	L1.4.9 **Average Temperature**	Varies	[redacted]	Folde Monthly Tempe atu e Data		
AY8 to AY19	L1.4.11 **Fraction of Volatile Solids Sent to Anaerobic Storage/Treatment System**	[redacted]	Basel ne scena o, see Cap and T ade Repo ts fo efe ence	Folde Cap and T ade documents	F le Basel ne Manu e Management Plan	
BA8 to BA19	L1.4.13 **Retention Time and Drainage**	Varies	[redacted]	Folde Cap and T ade documents	F le Basel ne Manu e Management Plan	
BB9	L1.4.14 **Carryover from Previous Month**	[redacted]	[redacted]	F le t e 1-dsm-calculato -co ected to calculate 2018 to 2019 Jan ca yove fo DD 08062020		
B52 to B56	L3.1 **Reporting Month(MM/YYYY)**	[redacted]	[redacted]			
F82 to F84	L4.5 **Fraction of Volatile Solids Sent to BCS System**	[redacted]	[redacted]	Folde Cap and T ade documents	F le Basel ne Manu e Management Plan	
B97	L5.1.b **Non-anaerobic Storage/Treatment Systems**	Cattle and Swine deep bedding (<1 month)	[redacted]	Folde Cap and T ade documents	F le Basel ne Manu e Management Plan	
D97 to F97	L5.3 **Manure Managed in Non-BCS (Other) Systems (MSL,S, fraction)**	[redacted]	[redacted]	Folde Cap and T ade documents	F le Basel ne Manu e Management Plan	
Avoided Emissions tab						
Cells	**Data input**		**Note**	**Primary Data Source**	**Secondary Data Source**	**Additional Data Source**
C4	P1.1 **Select Digester Type**	Enclosed Vessel	Enclosed Vessel			

Dairy Dreams Manure Storage Summary

Without these basic pieces of information, it is impossible for stakeholders—such as the undersigned organization, or CARB if it similarly lacks access—to meaningfully review the claims in the application and evaluate the environmental impact of the project.

B. The application fails to employ a methodologically sound life cycle analysis that accounts for the GHG emissions that result from the applicant's production of biomethane.

As previously discussed,[75] the bedrock of the LCFS program is "the principle that each fuel has '***life cycle***' [GHG] emissions that include CO_2, CH_4, N_2O, and other GHG contributors."[76] Contrary to this bedrock principle, the applicant's methodology assumes the preexistence of the vast quantity of manure and GHG emissions that the CAFO produces from its regular business of raising cows for milk and proceeds from that pseudo baseline. But in reality, the biomethane that the applicant produces begins with the cows, and a methodologically sound life cycle analysis would also begin with them.

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75 *See supra* section II.A.

76 Cal. Air. Res. Bd., *supra* note 4 (emphasis added).

The CAFO keeps approximately 6,000 cows, and an unknown number of these cows produce the manure that the methane digester converts to biomethane. The cows require enormous volumes of food, water, and transportation in order to be profitable, but none of the significant emissions[77] associated with these activities are accounted for or even acknowledged in the application. Nor are the significant emissions that come directly from the bodies of the cows.[78] The GHG emissions from the cows and the CAFO as a whole—including methane released from manure, enteric emissions, and other dairy operations—are unregulated. These emissions must be calculated and applied to the lifecycle GHG analysis for this project.

The applicant's failure to employ a methodology that accounts for the life cycle of the biomethane it produces is a fatal flaw because, in its current state, the application disregards the bedrock principle of the LCFS program. But if the applicant revised the application such that it complied with this bedrock principle by accurately representing the *life cycle* GHG emissions that result from production of the applicant's biomethane, it would reveal that there is nothing sustainable, renewable, or "green" about dairy CAFOs or methane digesters. In other words, if the application were methodologically sound, it would become more obvious that CAFOs undermine the purpose of the LCFS program, and that CARB should not allow them to exploit and profit from the program.

C. Granting the application would incentivize CAFOs to further expand and proliferate, which would increase air pollution, accelerate climate change, further degrade water quality and quantity, and harm community health.

CAFOs use methane digesters for one reason and one reason only: to increase profits. They do so by using digesters to greenwash their destructive business model and by using and selling the biomethane. The single biggest revenue stream available from the methane digesters, however, "come[s] from taking advantage of incentive structures like . . . California's Low Carbon Fuel Standard . . . ."[79]

By allowing CAFOs to take what is really a costly liability—the vast quantities of manure that they produce—and turn it into yet another source of profit, CARB would incentivize CAFOs to continue expanding and proliferating. This incentivization

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[77] "Emissions occur during the production of electricity, fuel, fertilizer, purchased feed, and so on, and they must be included in the life cycle . . . ." Rotz, *supra* note 14, at 6684.

[78] Enteric emissions are the largest source of GHG emissions from dairies. *Id.* at 6677.

[79] Tracy Leow, *Manure is big business at Oregon's largest dairy with conversion to natural gas*, STATESMAN JOURNAL (Mar. 31, 2019), https://www.statesmanjournal.com/story/tech/science/environment/2019/03/31/oregon-threemile-canyon-farms-dairy-natural-gas-manure/3247197002/.

would, in turn, result in CAFOs generating more manure and emitting ever-larger quantities of dangerous and climate change inducing GHG—*especially* methane. This stands in direct violation of the California Global Warming Solutions Act, which, as discussed above,[80] specifies that efforts to reduce GHG emissions should not compromise or conflict with efforts to reduce air pollution.[81] Incentivizing the CAFO industry to further expand and proliferate would also worsen other environmental impacts, including degradation of water quality and quantity. CAFO-occupied communities will pay the price for the continued expansion and proliferation of the CAFO industry.

This outcome is neither unprecedented nor conjectural. CARB has already caused the CAFO at issue in the application to expand,[82] despite its well-documented regulatory noncompliance and environmental destruction. Since CARB allowed the CAFO to begin participating in California's Cap-and-Trade-Program, it has acquired hundreds of additional cows—increasing air pollution, accelerating climate change, further degrading water quality and quantity, and harming community health.[83] CARB has an obligation to avoid repeating this mistake by allowing this CAFO to exploit and profit from the LCFS program.

I. CONCLUSION

The application should be rejected because there is no place for CAFOs in the LCFS program. The program exists to address climate change and pollution—not prop up the businesses responsible for causing climate change and pollution in the first place.

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80 *See supra* section II.A.

81 *See* Cal. Health & Safety Code § 38570(b).

82 Fourteen other dairy CAFOs in the area have *also* expanded due to CARB's decision to allow them to participate in the Cap-and-Trade-Program. "Dairy herd expansions in Wisconsin at the [fifteen] facilities have increased production of over 15,000 animals since the facilities registered for California carbon credits. Another four facilities are proposing to expand with an additional 2,700 animals. Expansion of these operations contributes to the production of more animal waste and, therefore, more potential for environmental pollution[.]" *Press Release: Trading Pollution: Wisconsin industrial dairies with documented regulatory compliance problems benefit from California greenhouse gas cap-and-trade program* SOC. RESPONSIBLE AGRIC. PROJECT (Aug. 2020), https://sraproject.org/2020/08/2016/.

83 *California Cap-and-Trade Program Summary*, *supra* note 72.

Sincerely,

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