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Submitted via ca.gov

Liane M. Randolph, Chair
California Air Resources Board
1001 I Street #2828
Sacramento, CA 95814

RE: COMMENTS IN OPPOSITION TO TIER 2 PATHWAY APPLICATION NO. B0214

Dear Chair Randolph:

Pursuant to Cal. Code Regs. tit. 17, § 95488.7(d)(5), the Animal Legal Defense Fund (ALDF)[1] submits the following comments in opposition to the above-referenced application for provisional certification of a Tier 2 pathway for manure methane. The manure methane would originate from an enormous Smithfield Foods pig concentrated animal feeding operation (CAFO) in Milford, Utah. Such CAFOs are the fulcrum 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 the environmentally destructive industrial animal agriculture system from exploiting and profiting from the Low Carbon Fuel Standard (LCFS) regulation, which exists to mitigate climate change and pollution.

CARB should reject this application. First, important factual information is omitted or redacted in the application, rendering meaningful stakeholder review of its claims impossible. Second, the application violates the LCFS regulation by failing to employ a methodologically sound life cycle analysis that accounts for the greenhouse gas (GHG) emissions that result from the applicant's production of manure methane. Third, CAFOs have significant environmental effects, including environmental injustice. Fourth, granting the application would incentivize the expansion and proliferation of CAFOs and the industrial animal agriculture system, exacerbating the

[1] ALDF is a national, nonprofit membership 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 industrial animal agriculture system across the United States is one of ALDF's central goals.

associated significant environmental effects in violation of the 2006 California Global Warming Solutions Act. Fifth, methane digesters are false solutions to the significant environmental effects inherent in industrial animal agriculture. Finally, granting the application would violate the California Environmental Quality Act (CEQA) and CARB's own certified regulatory program. For all of these reasons, we urge CARB to reject the application.

I. LEGAL BACKGROUND: THE LOW CARBON FUEL STANDARD REGULATION

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.[2] In 2007, then-Governor Schwarzenegger signed Executive Order S-1-07, which declared GHG emissions a "serious threat" to the environment and human health.[3]

CARB, which is responsible for reducing GHG emissions,[4] adopted the LCFS regulation in 2009 and began implementing it in 2011.[5] "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 it exists to reduce the GHG emissions that cause climate change.[6] The bedrock of the LCFS regulation is "the principle that each fuel has '***life cycle***' [GHG] emissions that include CO_2, CH_4, N_2O, and other GHG contributors."[7]

II. COMMENTS

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."[8] The application fails to conform to this requirement because it omits information that is necessary for stakeholders to perform a meaningful review of its claims. For example, the applicant fails to divulge the total

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

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

4 Cal. Health & Safety Code § 38510.

5 *Low Carbon Fuel Standard*, CAL. AIR. RES. BD., https://ww2.arb.ca.gov/our-work/programs/low-carbon-fuel-standard/about (last visited Sep. 8, 2021).

6 *Id.*

7 *Id.* (emphasis added).

8 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.

amount of manure generated, the total amount of manure sent to the digester, GHG emissions from the pigs, GHG emissions resulting from manure stored and applied to land, GHG emissions resulting from operations to feed, water, and transport the pigs, and other relevant information.

Other portions of the application are similarly opaque. Indeed, many pieces of critical data are redacted, as depicted below:

Element Markets Renewable Energy, LLC ("EMRE"), a wholly owned subsidiary of Element Markets, LLC, is pleased to submit this LCFS application utilizing livestock-derived biomethane. EMRE has [redacted] with [redacted] ([redacted]) biogas processing plant [redacted] swine farm in Milford, Utah (referred to herein as "Milford Farm"). The enclosed package includes the following:

Prior to the installation of covered lagoons, the farm operated with open lagoons for a short period of time commencing in 2019. The installment of covers on the open lagoons started in May 2019 and was completed by July 2020. The farm will be modeled and treated as a Greenfield project in accordance with ARB guidance and regulation as outlined in Compliance Offset Protocol for Livestock Projects. Additionally, due to limited microbial activity during the project's early stages between August and November 2020, the facility added [redacted] gallons of dairy manure to each of the lagoons. This equals [redacted] of dairy manure in relation to the total swine manure. The [redacted] dairy manure was pumped from a pit beneath the dairy barn into the [redacted]-gallon tanker truck. It was then hauled approximately [redacted] miles to Milford Farm. It was deposited into each digester via our digester mixing pump systems that are installed at each lagoon. The dairy manure was discharge from the truck and into the wet-well of our digester mixing pump while it was mixing. The facility does not consider this be a needed ongoing practice, however it will be monitored and reported to ARB and the verifiers in the event of recurring incidents.

e) Mass Balance

Following the guidelines described in ARB's *Biomethane From Dairy and Livestock Operations* GREET model calculator, the following mass balance equation was used during the modeling of biogas sent to the upgrading facility.

$$[1] = [2] + [3] + [4] + [5]$$

Where:
[1] – biogas methane flow [redacted] metered parameter
[2] – biogas methane flow [redacted], metered parameter
[3] – [redacted] methane flow [redacted], metered parameter
[4] – [redacted] biomethane flow [redacted], metered parameter
[5] – mass balance adjustment, calculated as [1]-[2]-[3]-[4]

Section 4. CI Calculation Details					
Manure to LNG			GHG emissions CO_2e	CI, gCO_2e/MMBtu	gCO_2e/MJ
[redacted]	Raw Biogas Production-Digester	Net-Diesel	[redacted]	[redacted]	[redacted]
		Net-Grid electricity	[redacted]	[redacted]	[redacted]
		Utility source NG	[redacted]	[redacted]	[redacted]
		Biomethane (heat)	[redacted]	[redacted]	[redacted]
		Subtotal			[redacted]
	Biogas upgrading	Grid electricity	[redacted]	[redacted]	[redacted]
		Utility source NG	[redacted]	[redacted]	[redacted]
		Biomethane (process fuel)	[redacted]	[redacted]	[redacted]
		Onsite electricity from biomethane	[redacted]	[redacted]	[redacted]
		Biomethane (flaring)	[redacted]	[redacted]	[redacted]
		Feed Loss (fugitive methane)	[redacted]	[redacted]	[redacted]
		Subtotal			[redacted]
[redacted]	Biomethane Transmission	by pipeline to LNG Plant	[redacted]	[redacted]	[redacted]
		by pipeline to CNG Plant	[redacted]	[redacted]	[redacted]
[redacted]	LNG Production	NG used as process fuel	[redacted]	[redacted]	[redacted]
		Electricity	[redacted]	[redacted]	[redacted]
		Subtotal			[redacted]
	LNG Transport and Distribution	By Truck	[redacted]	[redacted]	[redacted]
	LNG Storage		[redacted]	[redacted]	[redacted]
		Subtotal			[redacted]
Manure to CNG/LNG			GHG emissions CO_2e	CI, gCO_2e/MMBtu	gCO_2e/MJ
[redacted]	L-CNG and CNG Production	CI for Compression of CNG (standard Value)		[redacted]	[redacted]
	Tailpipe Emissions	CNG Vehicles		[redacted]	[redacted]
		LNG Vehicles		[redacted]	[redacted]
	Credits			Methane avoided	[redacted]
				CO2 diverted	[redacted]
				Final CNG CI, g/MJ	-413.67
				Final LNG CI, g/MJ	[redacted]
				Final L-CNG CI, g/MJ	[redacted]

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

B. The application violates the LCFS regulation by failing to employ a methodologically sound life cycle analysis that accounts for the GHG emissions that result from the applicant's production of manure methane.

As previously discussed,[9] the bedrock of the LCFS regulation is "the principle that each fuel has '***life cycle***' [GHG] emissions that include CO_2, CH_4, N_2O, and other GHG contributors."[10] Accordingly, the LCFS regulation requires Tier 2 applications to use a methodologically sound life cycle analysis that accounts for the GHG emissions

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9 *See supra* section I.

10 Cal. Air. Res. Bd., *supra* note 5 (emphasis added).

that result from the applicant's production of manure methane.[11] For the application to be "certifiable," this analysis must be "scientifically defensible."[12]

Contrary to the LCFS regulation, 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 confining pigs for meat and proceeds from that pseudo baseline. But the manure methane that the applicant produces begins with the pigs, and a methodologically sound and scientifically defensible life cycle analysis would also begin with them.

According to CARB's Staff Summary, this CAFO confines ***140,000 pigs***. The pigs require enormous volumes of food, water, and transportation in order to be profitable, but none of the significant emissions[13] associated with these activities are accounted for or even acknowledged in the application. Nor are the significant emissions that come directly from the pigs themselves.[14] The GHG emissions from the pigs and the CAFO as a whole—including methane released from manure, enteric emissions, and other operations—are unregulated. These emissions must be calculated and applied to the lifecycle GHG analysis for this project.

C. CAFOs have significant environmental effects, including environmental injustice.

CAFOs are not farms—they are industrial-scale agricultural facilities that keep hundreds to thousands of animals in cruel, high-density confinement.[15] CAFOs produce vast quantities of animal manure[16] and emissions (including GHGs) that

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11 Cal. Code Regs. tit. 17, § 95488.7(a).

12 § 95488.7(b).

13 *See* C. Alan Rotz, *Modeling Greenhouse Gas Emissions from Dairy Farms*, 101 J. OF DAIRY SCI. 6675, 6684 (2018), https://www.journalofdairyscience.org/action/showPdf?pii=S0022-0302%2817%2931069-X (opining in the context of dairy that "[e]missions occur during the production of electricity, fuel, fertilizer, purchased feed, and so on, and they must be included in the life cycle").

14 F. X. Philippe & B. Nicks, *Review on greenhouse gas emissions from pig houses: Production of carbon dioxide, methane and nitrous oxide by animals and manure*, 199 AGRIC., ECOSYSTEMS AND ENV'T 10, 12–13 (2015), https://orbi.uliege.be/bitstream/2268/172178/1/2015_AGEE.pdf.

15 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.

16 "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).

wreak havoc on the environment by polluting surface and groundwaters, degrading air quality, and spurring climate change.[17] These significant environmental effects harm human health,[18] particularly in the environmental justice communities[19] where CAFOs are disproportionately sited.[20] CAFOs and their significant environmental effects also harm animals, including farmed animals and wild animals who are members of endangered and threatened species.[21]

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

CAFOs produce emissions that fuel climate change[22] and degrade ambient air quality.[23] These emissions include four hundred different volatile organic compounds, particulate matter, methane, ammonia, hydrogen sulfide, ozone, endotoxins, and

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17 Hribar, *supra* note 15, at 2–11.

18 *Id.*

19 *See* 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).

20 *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).

21 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.

22 Hribar, *supra* note 15, at 7; *see* 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); 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).

23 Hribar, *supra* note 15, at 3.

noxious odors.[24] CAFOs produce nearly 75% of the United States' ammonia air pollution.[25]

These emissions are so concentrated that it can be dangerous even to approach a waste lagoon—particularly in hot summer months.[26] "The oxygen-deficient, toxic, and/or explosive atmosphere which can develop in a manure pit has claimed many lives."[27] There are multiple incidents of workers approaching lagoons to make repairs and succumbing to the emissions, including one recent incident that claimed the lives of three brothers in Minnesota.[28] Some workers die from hydrogen sulfide poisoning, while others asphyxiate in the oxygen-starved air.[29] Others die after collapsing during rescue attempts.[30]

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."[31] Ammonia is a "strong respiratory irritant" that causes chemical burns to the respiratory tract, skin, and eyes.[32] It also causes severe coughing and chronic lung disease.[33] 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.[34] Particulate matter causes "chronic bronchitis, chronic respiratory symptoms, declines

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24 *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).

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

26 Marks, *supra* note 24, at 26.

27 *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.

28 Graeme Massie, *Three brothers killed by manure pit fumes on family farm*, THE INDEPENDENT (Aug. 12, 2021), https://www.independent.co.uk/news/world/americas/manure-pit-fumes-kill-brothers-b1901689.html.

29 Marks, *supra* note 24, at 19.

30 *See id.* at 26.

31 Wilson, *supra* note 24, at 445 n.45.

32 CAFO Subcomm., *supra* note 22, at 4.

33 Hribar, *supra* note 15, at 6.

34 *Id.*; CAFO Subcomm., *supra* note 22, at 4.

in lung function, [and] organic dust toxic syndrome."[35] Tellingly, some of the nation's worst air quality is in the Central Valley, which is home to the largest concentration of CAFOs in California.[36]

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.[37] Pig and dairy CAFOs are particularly water intensive.[38] 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.[39] A single dairy CAFO 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.[40] "Because of this demand for water, CAFOs tend to seek sites above major aquifers [and] water is essentially treated as a free good after it is removed from the ground."[41]

CAFOs also pollute surface water and groundwater via lagoon breaches, seeps, and leaks; catastrophic flooding; and sprayfield runoff.[42] Contaminants in manure include nitrates and pathogens,[43] as well as ammonium, phosphate, dissolved solids, metals and metalloids, pharmaceutical chemicals, and natural and synthetic

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35 Hribar, *supra* note 15, at 6.

36 *See Ambient Air Quality Standards & Valley Attainment Status*, SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT, https://valleyair.org/aqinfo/attainment.htm (last visited Sep. 8, 2021); Timothy Douglas, *Dairy Digesters: Not a Solution*, LEADERSHIP COUNSEL FOR JUSTICE & ACCOUNTABILITY (Oct. 30, 2019), https://leadershipcounsel.org/dairy-digesters-not-a-solution/.

37 *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; 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).

38 *See* Hribar, *supra* note 15, at 8.

39 Weida, *supra* note 37, at 22.

40 This figure is quite conservative, as it does not include irrigation water. *See* Tracy Loew, *State officials let mega-dairy use loophole to tap endangered Oregon aquifer*, STATESMAN JOURNAL (Mar. 22, 2018), https://www.statesmanjournal.com/story/tech/science/environment/2018/03/22/lost-valley-mega-dairy-oregon-used-loophole-tap-aquifier-allowed-state-officials/426738002/.

41 Weida, *supra* note 37, at 22; *see* Loew, *supra* note 40.

42 Hribar, *supra* note 15, at 4.

43 Wing et al., *supra* note 20, at 225.

hormones.[44] 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.[45] Metals and metalloids include copper, zinc, arsenic, nickel, and selenium.[46] Pharmaceutical chemicals include antibiotics, and hormones include estrogen.[47]

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.[48] 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.[49] Rural Americans face significant health disparities that are exacerbated by the presence of CAFOs.[50] Most immediately, COVID-19 is revealing just how disparate health services and outcomes are in rural communities when compared to urban populations.[51]

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 traced its origin to a single North Carolina pig CAFO.[52] 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.[53] Similarly, though both

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

[45] Hribar, *supra* note 15, at 8–9.

[46] Hutchins et al., *supra* note 44, at 9.

[47] *Id.* at 9–13.

[48] Hribar, *supra* note 15, at 10.

[49] *Id.* at 4.

[50] *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.

[51] Liz Essley Whyte & 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.

[52] 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).

[53] 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).

COVID-19 and SARS likely originated in live animal markets,[54] they could have originated in CAFOs due to their similar conditions—and the next pandemic very well may.[55]

Finally, there are often antibiotics in CAFO animal feed.[56] Seventy percent of all antibiotics used in the United States are administered to farmed animals as feed additives.[57] CDC has recommended that the use of antibiotics in "food animals" be "phased out."[58] 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."[59] The risk 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.[60]

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[54] 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).

[55] 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.").

[56] Hribar, *supra* note 15, 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).

[57] Hribar, *supra* note 15, at 10; *see* Gilchrist et al., *supra* note 56, at 313 (noting that estimates suggest up to 87% of all antibiotic use in the United States is for livestock animals).

[58] CDC, *supra* note 56, at 11.

[59] Hribar, *supra* note 15, at 10.

[60] *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)).

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.[61] A study of the vertically integrated pig industry in North Carolina, which is dominated by Smithfield Foods, 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."[62] In the Central Valley, CAFOs are "put[ting] the health of local, often low-income communities and communities of color, at greater risk."[63] 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.[64]

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

CAFOs harm farmed animals by subjecting them to abuse and high-density confinement that increases their susceptibility to injury, illness, and disease.[65] For example, a recent undercover investigation of production practices for Fairlife Milk showed that, as a matter of routine and practice, Fairlife's cows were tortured, kicked, stomped, body slammed, stabbed with steel rebar, thrown off the side of trucks, dragged through the dirt by their ears, and left to die unattended in over 100-degree heat.[66] Calves who did not survive this cruelty were dumped in mass graves.[67] And pigs in CAFOs suffer in gestation crates, which are not even big enough for them to

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61 Steve Wing & 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 20, at 225.

62 Wing et al., *supra* note 20, at 225.

63 Douglas, *supra* note 36.

64 *Factory Farm Workers*, FOOD EMPOWERMENT PROJECT, https://foodispower.org/factory-farm-workers/ (last visited Sep. 8, 2021).

65 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.

66 *See, e.g.*, Alexia Elejalde-Ruiz, *1 arrested in Fair Oaks Farms animal abuse case; Fairlife, farm owners hit with lawsuit as activists release new video*, CHICAGO TRIBUNE (June 13, 2019), https://www.chicagotribune.com/business/ct-biz-fairlife-mccloskeys-fraud-lawsuit-20190612-story.html.

67 *See id.*

turn around in and cause them to experience musculoskeletal problems.[68] In addition, farmed animals generate massive amounts of waste, causing ammonia emissions to fill the warehouses in which they are confined and causing them to suffer painful skin, lung, and eye damage.[69] 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.[70] CAFOs harm terrestrial biodiversity by restricting genetic diversity, limiting or eliminating habitat (including forest, grassland, and wetland habitat),[71] "increas[ing] vulnerability to large-scale damage by pests,"[72] and introducing invasive species, including the farmed animals.[73] 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.[74]

D. Granting the application would further incentivize the proliferation and expansion of CAFOs and industrial animal agriculture, exacerbating the associated significant environmental effects in violation of the 2006 California Global Warming Solutions Act.

CAFOs construct methane digesters and submit Tier 2 applications in order to greenwash[75] the destructive business model of the industrial animal agriculture system, which includes CAFOs and slaughterhouses across the United States, and increase profits. And this strategy appears to be working—the single biggest revenue

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68 Animal Welfare Institute, *supra* note 65.

69 *Id.*

70 Pew Comm'n on Industrial Farm Animal Prod., *supra* note 21; U.N. Food and Agri. Org., *supra* note 21, at 196, 209, 273.

71 U.N. Food and Agri. Org., *supra* note 21, at 187.

72 Pew Comm'n on Industrial Farm Animal Prod., *supra* note 21, at 30.

73 U.N. Food and Agri. Org., *supra* note 21, at 197.

74 *Id.* at 187, 195–96.

75 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").

stream available from the use of methane digesters "come[s] from taking advantage of incentive structures like . . . California's Low Carbon Fuel Standard . . . ."[76]

By allowing CAFOs to transform a costly liability—the vast quantities of manure that they produce—into yet another source of profit, CARB incentivizes the expansion and proliferation of CAFOs and industrial animal agriculture. This incentivization, in turn, results in CAFOs generating more manure and emitting ever-larger quantities of dangerous and climate change inducing GHG and other air pollutants—*especially* methane. This stands in direct violation of the California Global Warming Solutions Act, which, as discussed above,[77] specifies that efforts to reduce GHG emissions should not compromise or conflict with efforts to reduce air pollution.[78]

Incentivizing the expansion and proliferation of CAFOs and industrial animal agriculture also worsens other significant environmental effects, including degradation of water quality and quantity. CAFO-occupied communities—often environmental justice communities—will pay the price for the continued expansion and proliferation of this industry.

This outcome is neither unprecedented nor conjectural—there is plentiful evidence that incentive programs, including under the LCFS regulation, are causing CAFOs to expand. In Wisconsin, fifteen CAFOs expanded after CARB allowed them to participate in the Cap-and-Trade-Program, despite well-documented regulatory noncompliance and environmental destruction.[79] The CAFOs have acquired thousands of additional cows—increasing air pollution, accelerating climate change, further degrading water quality and quantity, and harming community health.[80] Likewise, a

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[76] Tracy Loew, *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/.

[77] *See supra* section I.

[78] *See* Cal. Health & Safety Code § 38570(b).

[79] "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/press-release/press-release-trading-pollution/.

[80] *California Cap-and-Trade Program Summary*, SOC. RESPONSIBLE AGRIC. PROJECT, https://sraproject.org/2020/09/california-cap-and-trade-program-summary/ (last visited Sep. 8, 2021).

CAFO in Merced County is planning to install a methane digester and more than double the number of cows it confines after receiving public funds through the Dairy Digester and Research Development Program in 2019.[81] The natural gas industry and developers appear to be stoking expansions of entire clusters of CAFOs in California in response to the manure methane "gold rush"[82] that CARB has created with the LCFS regulation.[83]

E. Methane digesters are false solutions to the significant environmental effects inherent in industrial animal agriculture.

Methane digesters are one of the ways in which the animal agriculture industry is attempting to greenwash the environmentally destructive practices inherent in its business model.

But methane digesters are ineffective, inefficient, and dirty energy sources, much like the fossil fuels the LCFS regulation seeks to displace. First, they do nothing to abate the applicant's unregulated air emissions, including its significant enteric emissions.[84] Second, they do not capture all of the methane they produce, and some amount inevitably escapes as emissions.[85] Such "fugitive methane" cuts into the reductions in GHG emissions that digesters claim to offer.[86] Third, "when digesters

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[81] Leadership Counsel for Justice and Accountability, Food & Water Watch, and Central California Asthma Collaborative, Comments in Response to Administrative Law Judge's Ruling Directing Parties to File Comments on Phase 4A Staff Proposal and Related Questions 17–18 (June 30, 2021) (citing CAL. DEP'T OF FOOD AND AGRIC., REPORT TO THE JOINT LEGISLATIVE BUDGET COMMITTEE: DAIRY DIGESTER RESEARCH AND DEVELOPMENT PROGRAM REPORT OF FUNDED PROGRAM (2015-2020), https://www.cdfa.ca.gov/oefi/ddrdp/docs/DDRDP_Report_March2021.pdf; MERCED COUNTY, CONTRACT BOARD AGENDA ITEM (July 13, 2021), https://web2.co.merced.ca.us/boardagenda/2021/20210713Board/271687/271692/271744/271832/ITEM%2032271832.pdf).

[82] Leadership Counsel for Justice and Accountability, Food & Water Watch, and Central California Asthma Collaborative, Joint Reply Comments 4 (citing Ron Kotrba, *Gold Rush*, BIOMASS MAG. (Jan. 3, 2020), http://biomassmagazine.com/articles/16694/gold-rush).

[83] Leadership Counsel for Justice and Accountability et al., *supra* note 81 (citing LAKESIDE PIPELINE LLC, SOLICITATION FOR SB1383 DAIRY PILOT PROJECTS 15, 17, 19; 33 (2018); MERCED PIPELINE LLC, SOLICITATION FOR SB1383 DAIRY PILOT PROJECTS 19, 33; 37, 40 (2018)).

[84] *See* Philippe & Nicks, *supra* note 14.

[85] *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.

[86] *Id.*

burn methane, they release [other GHGs] like carbon dioxide and nitrogen oxide, which contribute[] to smog" and climate change.[87] 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."[88] Finally, digesters have the potential to spill or leak manure—and they may even explode.[89]

F. Approving the application would violate CEQA and CARB's own certified regulatory program.

CARB must comply with CEQA's[90] broad policy goals and substantive standards when considering whether to approve a Tier 2 application.[91] CARB must also comply with the requirements contained in its own certified regulatory program.[92] Accordingly, CARB must—among other things—preliminarily review Tier 2 pathway applications for manure methane, consider whether approving the applications would cause significant adverse effects on the environment, and avoid such effects where feasible.[93]

There is no evidence that CARB has contemplated CEQA's application to this action whatsoever, let alone complied with the requirements of its certified regulatory program or taken steps to avoid this action's significant adverse effects on the

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87 *Id.*

88 *Id.*

89 *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.").

90 Cal. Pub. Res. Code §§ 21000–21189.70.10; Cal. Code Regs. tit. 14, §§ 15000–15387.

91 *POET, LLC v. State Air Res. Bd.*, 218 Cal. App. 4th 681, 714 (Cal. Ct. App. 2013) ("*POET I*") (citing *City of Arcadia v. State Water Res. Control Bd.*, 135 Cal. App. 4th 1392, 1422 (Cal. Ct. App. 2006)), *as modified on denial of reh'g* (Aug. 8, 2013); *see id.* at 710 (explaining that, while state agencies acting under a certified regulatory program do not have to comply with certain requirements related to preparing initial studies, negative declarations, or environmental impact reports, the state agency's actions are still subject to all other provisions of CEQA (citing Cal. Pub. Res. Code § 21080.5(c); Cal. Code Regs. tit. 14, § 15250)).

92 *See* Cal. Code Regs. tit. 17, §§ 60000–60008.

93 Cal. Code Regs. tit. 14, § 15060; *POET I*, 218 Cal. App. 4th at 711 (citing Cal. Code Regs. tit. 14, § 15250).

environment.[94] As described above, by allowing this enormous CAFO to take what is really a costly liability—the vast quantities of manure that it produces—and turn it into yet another source of profit, approving the application would incentivize this CAFO and the animal agriculture industry more broadly to continue expanding and cumulatively emitting ever-larger quantities of dangerous and climate change inducing GHGs and other air pollutants. Allowing the animal agriculture industry to profit from the LCFS regulation would also exacerbate its other forms of environmental degradation and the associated community health and environmental justice impacts. Accordingly, CARB's approval of the application would violate CEQA and its own certified regulatory program.

III. CONCLUSION

There is no place for the industrial animal agriculture system in the LCFS regulation, which exists to address climate change and pollution—not prop up and fuel the industries responsible for causing climate change and pollution in the first place. We respectfully request that CARB reject Application B0214—to do otherwise would be arbitrary, capricious, contrary to law, and a violation of the 2006 California Global Warming Solutions Act, CEQA, and CARB's own certified regulatory program.

Sincerely,

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[94] *See, e.g.*, Cal. Code Regs. tit. 17, § 60003 (providing that CARB policy is to "prepare staff reports in a manner consistent with the environmental protection purposes of the state board's regulatory program and with the goals and policies of [CEQA]"); Cal. Code Regs. tit. 17, § 60004 (requiring that CARB conduct an environmental analysis for actions that constitute a project).