

BEFORE THE CALIFORNIA AIR RESOURCES BOARD

**LEADERSHIP COUNSEL FOR JUSTICE AND ACCOUNTABILITY, CENTRAL
VALLEY DEFENDERS FOR CLEAN WATER & AIR, ANIMAL LEGAL DEFENSE
FUND, AND FOOD & WATER WATCH COMMENTS ON PROPOSED
AMENDMENTS TO THE LOW CARBON FUEL STANDARD**

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I. EXECUTIVE SUMMARY

For more than four years, community members and organizations concerned about factory farm pollution and environmental injustice in the San Joaquin Valley—including the undersigned coalition of organizations (“Commenters”)—have raised the alarm about the consequences of the California Air Resources Board’s (“CARB”) monetization of factory farm pollution through the Low Carbon Fuel Standard (“LCFS”). Specifically, these community members and organizations have spotlighted CARB’s unlawful operation of the LCFS outside its regulatory authority—including CARB’s operation of the LCFS as a pollution trading scheme that fuels industry and investor profits while dumping the resulting pollution and related costs on rural, low-income, and/or Latino/a/e communities. CARB staff, in their proposed rule and Initial Statement of Reasons (“ISOR”), have ignored these concerns, along with the people raising them and the facts underpinning them. CARB must comply with its legal obligations and reform the LCFS.

The rulemaking package put forward by CARB staff (“proposed Amendments” or “Amendments”)¹ fails to correct the program and, in fact, makes things worse. First, the proposed amendments ignore and attempt to displace CARB’s mandatory duties to directly regulate manure methane emissions pursuant to SB 1383 and prioritize direct emission reductions as mandated by AB 197. Instead, CARB continues to use the false baseline of perpetually unregulated manure methane emissions to continue its perverse policy of avoided methane crediting that enriches the largest and most polluting operations and investors in factory farm gas. Second, the proposed Amendments continue to ignore the true carbon intensity of factory farm gas production. Third, the proposed Amendments continue to ignore that the LCFS is a market-based compliance mechanism and that CARB must ensure the additionality of LCFS greenhouse gas emission reductions. Fourth, the Amendments attempt to use the LCFS to achieve post-2030 greenhouse gas emissions reductions, including the development of biomethane and hydrogen fuels for stationary sources, outside of CARB’s delegated authority. Finally, the amendments will continue and intensify CARB’s discrimination against rural, low-income, Latino/a/e communities in the San Joaquin Valley both by incentivizing herd consolidation and by increasing pollution associated with the production and use of factory farm gas.

The proposed LCFS amendments are more than arbitrary and capricious—they are indefensible.

¹ Commenters intend these comments to respond to all LCFS regulatory proposals currently open for public comment. This includes but is not necessarily limited to the Initial Statement of Reasons (“ISOR”) and all Attachments, all environmental reviews, all relevant proposed simplified Tier 1 calculators, the proposed CA-GREET4.0, and development of staff’s proposed April 2024 workshop. Leadership Counsel for Justice and Accountability also concurrently submit separate comments in response to the Draft Environmental Impact Analysis, Commenters incorporate those comments by reference as though fully set forth herein and intend them to complement those laid out here.

II. FACTUAL BACKGROUND

A. Manure Management & California's Dairy Herd

Dairies have multiple options for manure management. Most dairies in the San Joaquin Valley use free stalls or corrals with a flush system. Other options, used by some dairies, include pasture-based manure management and collection of “manure from feed lanes via regular scraping or vacuuming.”² The latter two are manure management techniques available to dairies which use less water and produce fewer pollutants overall.

The number of milk cows in California at large dairies has increased since 2017, the number of milk cows at smaller dairies has decreased, and the number of dairy farms has decreased disproportionately more than the overall number of milk cows in the state. The data demonstrate that the California dairy herd is consolidating and concentrating into larger dairies. The data show that for dairies with 2,500 or more milk cows, the milk cow herd increased 26.8 percent from 808,503 milk cows in 2017 to 1,025,716 milk cows in 2022, while the population of cows on dairies with less than 1,000 cows decreased 52.4 percent, from 303,746 milk cows in 2017 to 144,472 in 2022.³

The San Joaquin Valley is experiencing the trend and impacts of herd-size expansions more than any other region of the state. While the overall population of cows fell in California, the number of cows in the San Joaquin Valley grew slightly, even while the number of dairy farms dropped dramatically, demonstrating the pattern of herd consolidation and concentration within the San Joaquin Valley and near San Joaquin Valley communities. The San Joaquin Valley is now home to over 90% of dairy cows in California and the average herd size in the San Joaquin Valley grew from about 1,577 to about 2,052 between 2017 and 2022.⁴ It bears noting that the consolidation trend in California has accelerated substantially since 2017. For instance, the average dairy herd grew from approximately 940 to 1059 dairy cows between 2012 and 2017,⁵ while the average dairy herd jumped from approximately 1059 to 1511 between 2017 and 2022.⁶ As discussed throughout these comments, the proposed Amendments will continue to contribute to herd expansion and the concentration of milk cows and manure in the San Joaquin Valley.

B. Dairies with LCFS pathways and digester projects are located in a disproportionately Latino/a/e region of the state.

Communities and households near and most directly impacted by large dairies that are installing digesters are disproportionately Latino/a/e. Each of the top 10 counties for dairy

² Ex. 1, ANDREW CHANG ET AL., UNIV. OF CAL., DIV. OF AGRIC. AND NAT. RES., MANAGING DAIRY MANURE IN THE CENTRAL VALLEY OF CALIFORNIA (rev. June 2005), <https://perma.cc/BS9A-2M5U>.

³ Ex. 2, U.S. DEPT. OF AGRIC., 2022 CENSUS OF AGRICULTURE: CALIFORNIA STATE AND COUNTY DATA 16, Tbl. 12.

⁴ *Id.* at 370 *et seq.*, Tbl. 11.

⁵ Ex. 3, U.S. DEPT. OF AGRIC., 2017 CENSUS OF AGRICULTURE: CALIFORNIA STATE AND COUNTY DATA 20, Tbl. 12.

⁶ 2022 CENSUS OF AGRICULTURE: CALIFORNIA STATE AND COUNTY DATA, *supra* note 3, at 16, Tbl. 12.

production have a higher percentage of Latino/a/e/ residents than the state as a whole.⁷ Similarly, each of the eight counties in the San Joaquin Valley are a higher percentage Latino/a/e than the state as a whole (including the seven San Joaquin Valley counties that are home to 99.3% of DDRDP-funded digesters⁸ and 86% of livestock manure LCFS pathways in the state). Moreover, studies have shown that communities near dairies are disproportionately Latino/a/e.⁹

C. Concentrating dairy herds and dairy cows, as well as the use of manure digesters, exacerbate environmental harms in the San Joaquin Valley.

1. Ammonia Emissions and Exposure

Ammonia is a toxic, odorous gas. Prolonged exposure to elevated ammonia levels causes respiratory issues; irritation to the throat, lungs, and eyes; and lung damage. Large livestock operations account for 57% of ammonia emissions in the San Joaquin Valley air basin.¹⁰ As large dairy operations continue to grow in the San Joaquin Valley, so too will ammonia emissions from those operations. Furthermore, the process of manure digestion itself changes the composition of manure such that ammonia emissions increase along with other emissions.¹¹ This increase in ammonia emissions increases the risk of exposure to toxic levels of ammonia.¹²

2. Fine Particulate Matter (PM_{2.5})

In addition to the health risks of ammonia exposure on its own, ammonia reacts with nitrogen oxides (e.g., NO_x) and contributes to the formation of ammonium nitrate, a fine particulate matter (“PM_{2.5}”). Ammonium nitrate comprises a large portion of the PM_{2.5} in the San Joaquin

⁷ According to Census data, California’s population as a whole is 40.3% Hispanic identifying. The top 10 counties for dairy production, along with their respective percentage Hispanic population, are as follows: Tulare (67%), Merced (63.2%), Stanislaus (50.3%), Kings (57.3%), Kern (56.8%), Fresno (55%), San Joaquin (43.1%), Madera (60.8%), San Bernardino (56.2%), Riverside (52%). Data available at: U.S. Census Bureau, *Quick Facts*, <https://www.census.gov/quickfacts/>.

⁸ Ex. 4, CAL. DEPT. OF FOOD AND AGRIC., DAIRY DIGESTER RESEARCH AND DEVELOPMENT PROGRAM: PROJECT-LEVEL DATA (updated Jan. 5, 2024), <https://perma.cc/H6RQ-9TR7>.

⁹ Ex. 5, Joan A. Casey et al., *Climate Justice and California’s Methane Superemitters: Environmental Equity Assessment of Community Proximity and Exposure Intensity*, 55 ENVTL. SCI. & TECH. 14746 (2021), <https://pubs.acs.org/doi/full/10.1021/acs.est.1c04328> (“Unadjusted models showed racial/ethnic and SES disparities in the odds of living in close proximity to methane superemitters and intensity of exposure based on multiple industry categories and total methane emissions. In adjusted models, the associations with race/ethnicity persisted Further, subanalyses restricted to dairies/manure management facilities and oil and gas production revealed similar racial disparities as the main analysis.”); Ex. 6, Sarah Brown Blake, *Spatial Relationships among Dairy Farms, Drinking Water Quality, and Maternal-Child Health Outcomes in the San Joaquin Valley*, 31:6 PUB. HEALTH NURSING (2014) (“ZIP codes with dairy cows had greater overall population (p = .008), higher total birth numbers (p = .010), and a larger percentage of births to mothers who identified as Hispanic (p = .001). In contrast, the percentage of births to mothers who identified as American Indian (p = .004), African American (p = .002), and White (p = .012) was significantly lower in ZIP codes with dairy farms.”).

¹⁰ Ex. 7, U.S. ENVTL. PROT. AGENCY, TECHNICAL SUPPORT DOCUMENT, EPA EVALUATION OF PM_{2.5} PRECURSOR DEMONSTRATION, SAN JOAQUIN VALLEY PM_{2.5} PLAN FOR THE 2006 PM_{2.5} NAAQS.

¹¹ Ex. 8, Paul Rosenfeld, Comments on the Proposed Amendments to the Low Carbon Fuel Standard 1–5 (Feb. 14, 2024).

¹² *Id.*

Valley. For example, ammonium nitrate comprises 38 percent of the PM2.5 mass on an annual average basis in Bakersfield, and 61 percent on high PM2.5 days.¹³

The San Joaquin Valley is classified as an area that fails to meet most federal air quality standards.¹⁴ According to the American Lung Association’s annual State of the Air Report, Bakersfield is the most polluted city in the country with respect to short-term exposure to PM2.5, followed by Fresno-Madera-Hanford, with Visalia coming in fourth.¹⁵ Bakersfield and Visalia are tied for the most polluted cities with respect to long term PM2.5 exposure, followed immediately by Visalia.¹⁶ CARB has acknowledged that PM2.5 exposure alone “is responsible for about 1,200 cases of premature death in the Valley each year.”¹⁷

Exposure to PM2.5 is linked to premature deaths in people with heart or lung disease, heart attacks, irregular heartbeat, aggravated asthma, decreased lung function and long-term lung conditions including cancer.

As noted above, increased numbers and concentration of cows will increase ammonia emissions. Similarly, it will increase NOx emissions. Additionally, increased installation and operation of digesters will intensify and increase NOx in the San Joaquin Valley. Digesters that utilize internal combustion engines – either to generate electricity or to power electrolysis – emit large amounts of NOx,¹⁸ Additionally, flaring of biogas creates significant NOx emissions.¹⁹

Thus, an increase in the size and concentration of dairy cows, along with the increased emissions from digesters and digested manure will contribute to increased PM 2.5 concentrations in the San Joaquin Valley.

3. Ozone Pollution

Dairies are the largest source of volatile organic compounds in the San Joaquin Valley and combine with NOx to make ozone. The San Joaquin Valley also violates health-based standards for ozone.²⁰ Visalia, Bakersfield, and Fresno-Madera-Hanford are the second, third, and fourth

¹³ Ex. 9, SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DIST., 2018 PLAN FOR THE 1997, 2006, AND 2012 PM2.5 STANDARDS 3-2 to 3-3 (Nov. 15, 2018), <https://perma.cc/6GMN-J3MC>.

¹⁴ Designation of Areas for Air Quality Planning Purposes; California; San Joaquin Valley; Reclassification as Serious Nonattainment for the 1997 PM2.5 Standards, 80 FED. REG. 18528 (Apr. 7, 2015); Designation of Areas for Air Quality Planning Purposes; California; San Joaquin Valley; Reclassification as Serious Nonattainment for the 2006 PM2.5 NAAQS, 81 FED. REG. 2993 (Jan. 20, 2016); Air Quality Designations for the 2012 Primary Annual Fine Particle (PM[2.5]) National Ambient Air Quality Standards (NAAQS), 80 FED. REG. 2206, 2217 (Jan. 15, 2015).

¹⁵ Ex. 10, AM. LUNG ASSN., STATE OF THE AIR 14 (2023), <https://perma.cc/4TDN-LKH3>.

¹⁶ *Id.* at 16

¹⁷ Ex. 11, Press Release, *Clean-Air Plan for San Joaquin Valley First to Meet All Federal Standards for Fine Particle Pollution*, CARB (Jan. 24, 2019), <https://perma.cc/7YR7-E3C6>.

¹⁸ Rosenfeld, *supra* note 11, at 4.

¹⁹ CARB, STANDARDIZED REGULATORY IMPACT ASSESSMENT FOR THE LOW CARBON FUEL STANDARD 2023 AMENDMENTS B-2, Tbl 49 (Sept. 8, 2023), <https://perma.cc/9B8H-4ABT>.

²⁰ Designation of Areas for Air Quality Planning Purposes; California; San Joaquin Valley, South Coast Air Basin, Coachella Valley, and Sacramento Metro 8-Hour Ozone Nonattainment Areas; Reclassification, 75 FED. REG. 24409 (May 5, 2010); Air Quality Designations for the 2008 Ozone National Ambient Air Quality Standards, 77 FED. REG. 30088, 30092 (May 21, 2012).

most ozone-polluted cities in the United States.²¹ Ozone can cause a variety of respiratory illnesses, especially in children and for people who have asthma. As the numbers and concentration of cows in the San Joaquin Valley increase, so too will NO_x and emissions of volatile organic compounds, thus exacerbating ozone pollution.

4. Nitrate Pollution

Large scale dairy operations in the San Joaquin Valley contribute to nitrate groundwater pollution.²² As more cows are concentrated on large dairies in the San Joaquin Valley, the problem will only intensify. Digesters do not solve this problem. Ninety-four percent of nitrate pollution is the result of application of manure to cropland, a practice that continues whether the manure is or is not digested.²³ Therefore, the installation of a digester, even if the anaerobic manure cesspool is lined, does not address the nitrate contamination of groundwater. In fact, rather than mitigate nitrate contamination, the changed chemical composition of digestate post-digestion exacerbates nitrate leaching to groundwater, thus increasing the likely incidence and intensity of groundwater and drinking water pollution in communities near operations that use digesters and apply manure to fields.²⁴

Nitrate contamination in drinking water is associated with dangerous human health conditions like colorectal cancer, thyroid disease, birth defects, and premature births.²⁵ Nitrates in drinking water may be best known for interfering with red blood cells' ability to carry oxygen. This can cause methemoglobinemia, a serious condition in infants (known as "blue baby syndrome") that can be fatal.²⁶ California agencies are well aware of the public health risks posed by nitrates in drinking water.²⁷

²¹ AM. LUNG ASSN., *supra* note 15, at 18.

²² Ex. 12, CENTRAL VALLEY REGIONAL WATER QUALITY CONTROL BOARD & CENTRAL VALLEY DAIRY REPRESENTATIVE MONITORING PROGRAM, SUMMARY REPRESENTATIVE MONITORING REPORT at 6 (Apr. 1, 2019), <https://leadershipcounsel.org/wp-content/uploads/2019/10/Dairy-report.pdf>. The Central Valley Summary Representative Monitoring Report presents years of monitoring data from forty-two Central Valley dairies chosen to be representative of the industry in the region. The report found elevated nitrate-N (*i.e.*, as nitrogen) concentrations were present beneath all monitored dairies. Dairies produce an "excess supply of nitrogen" in the form of manure than the amount that can be safely applied to cropland without causing or contributing to nitrate pollution.

²³ *Id.* at 10

²⁴ Rosenfeld, *supra* note 11, at 5–7; Ex. 13, U.S. DEPT. AGRIC., NAT. RES. CONSERVATION SERV., CONSERVATION PRACTICE STANDARD CODE 366: ANAEROBIC DIGESTER (Aug. 2023) ("land application of digester effluent, compared with fresh manure, may have a higher risk for both ground and surface water quality problems. Compounds such as nitrogen, phosphorus, and other elements become more soluble due to anaerobic digestion and therefore have higher potential to move with water.").

²⁵ See, e.g., Ex. 14, Mary Ward et al., *Drinking Water Nitrate and Human Health: An Updated Review* 15:7 INT. J. ENVTL. RES. PUB. HEALTH 1557 (2018), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6068531/>; Ex. 15, Roberto Picetti et al., *Nitrate and Nitrite Contamination in Drinking Water and Cancer Risk: A Systematic Review with Meta-Analysis*, 210 ENV'TL RES. 112988 (July 2022), <https://www.sciencedirect.com/science/article/pii/S0013935122003152>.

²⁶ *Id.*

²⁷ Ex. 16, *Nitrate Fact Sheet*, CAL. DEP'T OF PUB. HEALTH (updated May 2014), <https://perma.cc/C6SA-QKQF>.

Nitrate contamination disproportionately impacts small, rural, disadvantaged communities of color.²⁸ Rural, disadvantaged communities also tend to be very low-income²⁹ and pay on average three times the cost for water considered affordable by the U.S. Environmental Protection Agency.³⁰ Additionally, communities and households reliant on domestic wells, and therefore especially vulnerable to nitrate pollution, are disproportionately Latino/a/e.³¹

Thus, increased concentration of cows, increased herd sizes, and increased use of digesters will exacerbate nitrate contamination in the San Joaquin Valley and will harm lower income communities of color in particular.

5. *Groundwater Depletion*

The San Joaquin Valley is ground zero for critical groundwater overdraft and water scarcity.³² Thousands of private and community water wells, upon which many Californians rely for drinking water, have already run dry.³³ Overdraft also impacts water quality. As groundwater supply decreases, concentrations of contaminants, especially arsenic, increase.³⁴

Industrial dairies use massive amounts of water including groundwater in the extremely fragile San Joaquin Valley ecosystem. In addition to supplying large amounts of drinking water to cows, dairies need large amounts of water for liquefying and flushing manure and other pollutants for storage in lagoons, cooling animals, cleaning facilities, and irrigating crops. In addition, dairies rely upon water-intensive crops to feed dairy cows such as alfalfa. California's large dairies use an estimated 142 million gallons per day, or almost 52 billion gallons per year.³⁵

As stated above, low-income communities and communities of color in the Central Valley rely disproportionately on private wells. As a result, low-income households, people of color, and

²⁸ Ex. 17, Carolina Balazs et al., *Social Disparities in Nitrate Contaminated Drinking Water in California's San Joaquin Valley*, 119:9 ENVTL. HEALTH PERSPS. (Sept. 2011), <https://ehp.niehs.nih.gov/doi/full/10.1289/ehp.1002878>.

²⁹ Ex. 18, JONATHAN LONDON ET AL., UC DAVIS CENTER FOR REGIONAL CHANGE, *THE STRUGGLE FOR WATER JUSTICE IN CALIFORNIA'S SAN JOAQUIN VALLEY: A FOCUS ON DISADVANTAGED UNINCORPORATED COMMUNITIES* at 8–13 (Feb. 2018), <https://perma.cc/XU6W-E86J>.

³⁰ Ex. 19, ELI MOORE ET AL., PACIFIC INSTITUTE, *THE HUMAN COSTS OF NITRATE-CONTAMINATED DRINKING WATER IN THE SAN JOAQUIN VALLEY* 7 (Mar. 2011), <https://perma.cc/2WEL-2EGE>.

³¹ Balazs et al., *supra* note 28.

³² *Critically Overdrafted Basins*, CAL. DEPT. OF WATER RES., <https://perma.cc/5F94-9HQN> (last visited Feb. 20, 2024) (showing most groundwater basins and subbasins in the San Joaquin Valley are critically overdrafted); *see* Ex. 20, ELLEN HANAK ET AL., PUB. POL. INST. OF CAL., *WATER AND THE FUTURE OF THE SAN JOAQUIN VALLEY* (2019), <https://perma.cc/K8BG-SWUB>.

³³ Ex. 21, *Groundwater Management and Drought: An Interview with the San Joaquin Valley Partnership*, CAL. DEPT. OF WATER RES. (Mar. 8, 2022), <https://perma.cc/SRE5-58P9> (noting that groundwater overdraft is causing domestic well owners to “lose access to their primary source of drinking water,” leaving them unable to “afford or obtain services due to drilling backlogs or financial challenges” and forcing them to seek out and rely on emergency sources of drinking water); *see* Ex. 22, Jelena Jezdimirovic et al., *Will Groundwater Sustainability Plans End the Problem of Dry Drinking Water Wells?*, PUB. POL. INST. OF CAL. (May 14, 2020), <https://perma.cc/GMA6-KMBD>.

³⁴ *See* Ex. 23, Phillip Dube, *Overpumping California Groundwater Could Lead to Dangerous Arsenic in Water and Food*, YALE ENVT. REV. (June 6, 2019), <https://perma.cc/EDP2-VJ4A>.

³⁵ Ex. 24, FOOD & WATER WATCH, *BIG AG, BIG OIL AND CALIFORNIA'S BIG WATER PROBLEM*, <https://perma.cc/5UP6-9D62>.

communities already burdened with environmental pollution are disproportionately impacted by groundwater depletion.³⁶

Concentration of dairy herds exacerbates localized impacts related to overdraft because more water used in one place creates a “cone of depression” in the groundwater basin.³⁷ Specifically, “[w]hen the extraction starts, groundwater is taken from storage to create gradients towards the well, and the resulting decline of water levels is observed only locally around the well. When pumping continues, the cone of depression expands and deepens, as more groundwater is released from storage to support the extraction.”³⁸ As such, even if a dairies’ expansion merely shifts water use from one part of a groundwater basin to another (which is sometimes, but not always, the case), it is likely to expand and deepen the resulting cone of depression in the underlying groundwater, putting nearby domestic wells and public supply wells at risk of being dewatered.

As dairies expand and more cows concentrate in vulnerable regions in the San Joaquin Valley, the crisis of groundwater depletion will continue to grow in severity.

6. Odor and Flies

Commenters are not aware of a study conducted to analyze the nuisance or health impacts of odor or flies near factory farm dairies. However, residents who live near factory farm dairies consistently report intense odors from the dairies. They report that they cannot enjoy time outdoor and even that these odors follow them indoors, permeating their clothes, and causing headaches. Residents also report a high incidence of flies around their communities and their homes.³⁹ They report that they do not experience an improvement in either with the installation of a digester.⁴⁰ Common sense dictates that more cows, more cows concentrated on large farming operations near communities will only exacerbate the impacts of odor and flies on San Joaquin Valley residents.

D. The LCFS Amendments will increase transportation costs for lower income people and people of color.

As outlined in the Standardized Regulatory Impact Assessment (“SRIA”), the proposed Amendments will have a significant impact on gas prices.⁴¹ In the ISOR, Staff attempts to walk back this finding, contending that causation between credit prices and gasoline prices is uncertain and asserting that *average* transportation costs will fall.⁴² Increased gasoline costs will be borne

³⁶ Balazs et al., *supra* note 28.

³⁷ Ex. 25, Andy Louwyck et al., *The Radius of Influence Myth*, 14:2 WATER (Jan. 2022), <https://perma.cc/3F3S-FS2N>; see also University of Minnesota Extension, *What Is a Cone of Depression*, YOUTUBE (Jan. 11, 2021), <https://perma.cc/5EXC-54CL>.

³⁸ Louwyck et al., *supra* note 37.

³⁹ Ex. 26, Letter from Central Valley Defenders of Clean Air and Water, to CARB Chair Liane M. Randolph (June 23, 2022), <https://perma.cc/HW82-RNYZ>.

⁴⁰ *Id.*

⁴¹ CARB, STANDARDIZED REGULATORY IMPACT ASSESSMENT FOR THE LOW CARBON FUEL STANDARD 2023 AMENDMENTS 55–59 (Sept. 8, 2023), <https://perma.cc/FV2Y-456V>.

⁴² CARB, STAFF REPORT: INITIAL STATEMENT OF REASONS 82–84 (released Dec. 19, 2023), <https://perma.cc/FJ9B-3UXD> (hereinafter “ISOR”).

disproportionately by lower income people, lower income communities,⁴³ and communities that are disproportionately Latino and Black.⁴⁴ Lower income households pay a higher share of income on gas, are less able to adjust their use of gasoline which they need to reach employment and educational opportunities, and lower income people and Latino and Black people have less access to electric vehicles.⁴⁵

E. The LCFS's treatment of dairy digesters creates an incentive for concentrated herds and liquid manure management.

CARB's treatment of factory farm gas under the LCFS has the perverse effect of incentivizing larger, more concentrated herds and methane producing manure management systems, the two most important factors that increase a dairy's climate emissions. This is so because under CARB's "avoided methane" crediting, large herd size equates to increased profits from the LCFS and without liquid manure lagoons that cause large methane emissions a dairy cannot claim the extremely negative CI values enjoyed by other factory farm gas projects.

Regarding herd sizes and concentration, operators are increasing the number of animals housed in large confinement operations using liquid manure systems as indicated by the most recent Ag Census data.⁴⁶ More animals mean more manure which means more opportunity to generate methane pollution. Larger herds lead to more cost effective and profitable gas production.⁴⁷ As the largest factory farms monetize their pollution and reap additional profits from the LCFS, this provides a competitive advantage in the related agricultural markets,⁴⁸ thus further incentivizing competitors to expand, change their waste management practices, or otherwise seek to maximize their own methane emissions to profit off the LCFS and minimize their competitors' competitive advantage. As one researcher at UCLA recently wrote, "Investing in industrial dairies further bolsters the competitive edge of these mega-operations at the expense of more sustainable dairying models."⁴⁹

⁴³ The bottom quintile of families by income level spends 16% of their income on gas and fuel compared to 8% for the second-lowest income group or 2% for the highest-income group. Ex. 27, Sarah Bohn & Daniel Payares-Montoya, *Gas Prices Stretch Family Budgets*, PUB. POL. INST. OF CAL. (Mar. 16, 2022), <https://perma.cc/G78T-XNDL>.

⁴⁴ Ex. 28, Nadia Lopez and Erica Yee, *Who Buys Electric Cars in California – and Who Doesn't?*, CAL MATTERS (Mar. 22, 2023), <https://perma.cc/2NVJ-AZGU> ("ZIP codes with the highest rates of electric car ownership tend to be more white and Asian and less Latino and Black than the general population.").

⁴⁵ Sarah Bohn & Daniel Payares-Montoya, *supra* note 43. See also Nadia Lopez & Erica Yee, *supra* note 44.

⁴⁶ The data shows that the average size of a dairy in California shot up from approximately 1059 to approximately 1511 in 2022, a marked increase from the years before CARB implemented avoided methane crediting. See *supra* notes 3 through 6.

⁴⁷ See Ex. 29, Markus Lauer et al., *Making Money from Waste: The Economic Viability of Producing Biogas and Biomethane in the Idaho Dairy Industry*, 222 APPLIED ENERGY 621 (2018), <https://www.sciencedirect.com/science/article/pii/S0306261918305695> ("For each digester type, the total capital cost per additional cow decreases, exhibiting economies of scale in farm size.").

⁴⁸ Ex. 30, RUTHIE LAZENBY, EMMETT INSTITUTE ON CLIMATE CHANGE & THE ENVIRONMENT, MITIGATING EMISSIONS FROM CALIFORNIA'S DAIRIES: CONSIDERING THE ROLE OF ANAEROBIC DIGESTERS IN MITIGATING EMISSIONS FROM CALIFORNIA'S DAIRIES 13, 28 (Jan. 2024), <https://perma.cc/3RN4-WVFS>.

⁴⁹ *Id.* at 28.

Petitioners previously documented the strong correlation between the installation of digesters, the issuance of a LCFS pathway, and the concentration of dairy herds.⁵⁰ We incorporate those findings here and note that herd expansions in association with factory farm gas development continue. For example, Borba Dairy in California is currently seeking a conditional use permit to expand its herd from 4,450 animals to 6,100 animals. This expansion is intertwined with the dairy's plans to also develop a digester that would collect and digest manure. The expansion includes construction of new lagoons to store liquified manure even though alternatives exist that would avoid producing more methane pollution from this dairy. Pressurized gas from the digester would be transported via truck or pipeline to the Hilmar Biogas Cluster Plant.⁵¹

Commonsense supports the expectation that an industry known for cutting costs and taking advantage of lax regulation will seek to maximize the very large source of profits presented by avoided methane crediting under the LCFS, especially when CARB staff have broadcast that they do not intend to mandate methane reductions at dairies in the foreseeable future. And while it may be true that a number of factors contribute to the concentration of dairy herds, CARB's choices to incentivize the production of manure and methane are, at a minimum, contributing factors to the consolidation and expansion of herds.

Regarding how dairies manage their manure, the perverse incentives put in place by avoided methane crediting leads factory farms to structure their operations to maximize methane pollution. There are many ways this happens. For example, operators maximize the quantity of volatile organics put into anaerobic environments to maximize gas production instead of lowering methane emissions by diverting solids into dry handling systems.⁵² This happens during new construction but also through modifications to existing operations. Doing otherwise leaves money on the table under CARB's backward incentive structure.

Commenters recognize some large factory farms utilized liquid manure handling systems prior to participating in the LCFS, but CARB's incentives pressure new or modified infrastructure development to double down on the conditions and practices that produce the most methane pollution. And conversely, the LCFS disincentivizes conditions or practices that simply do not produce meaningful methane emissions to begin with. This is predictable as projects that include the largest, most polluting factory farms receive the most lavish Carbon Intensity values and thus

⁵⁰ Ex. 31, ASSOCIATION OF IRRITATED RESIDENTS ET AL., PETITION FOR RULEMAKING TO EXCLUDE ALL FUELS DERIVED FROM BIOMETHANE FROM DAIRY AND SWINE MANURE FROM THE LOW CARBON FUEL STANDARD PROGRAM at 25 (Oct. 27, 2021), <https://perma.cc/Z8LP-F7EC>; Ex. 32, ASSOCIATION OF IRRITATED RESIDENTS ET AL., PETITION FOR RECONSIDERATION OF THE DENIAL OF THE PETITION FOR RULEMAKING TO EXCLUDE ALL FUELS DERIVED FROM BIOMETHANE FROM DAIRY AND SWINE MANURE FROM THE LOW CARBON FUEL STANDARD PROGRAM at 10–16 (Mar. 25, 2022), <https://perma.cc/2YLM-4UHP>.

⁵¹ Ex. 33, MERCED COUNTY, DRAFT ENVIRONMENTAL IMPACT REPORT FOR THE BORBA DAIRY FARMS EXPANSION PROJECT (Jan. 18, 2024), <https://perma.cc/6ZDZ-G45E>.

⁵² As just one illustrative example, the Threemile Project, Fuel Pathway Code CNG026B00720100, used solid separation before any anaerobic handling prior to installing digesters, but then moved liquid-solid separation to *after* anaerobic digestion resulting in more organics decomposing anaerobically that thus generating more methane. Ex. 34, CARB, STAFF SUMMARY, IOGEN D3 BIOFUEL PARTNERS II LLC PATHWAY APPLICATION, <https://perma.cc/G4L3-QC2J>.

credit generation opportunities. In California, nearly all dairies large enough to benefit from LCFS subsidies are disproportionately located in or near Latino/a/e communities.⁵³

These counterproductive dynamics are explainable, in part, by the “cobra effect,” whereby people are incentivized to produce more of the thing that a program is intended to mitigate.⁵⁴ Turning avoidable pollution into a valuable product influences rational economic actors to follow this manner of thinking in their operational decision making. Instead of mitigating the manure methane problem, it has transformed it into a lucrative product that factory farms now seek to maximize for subsequent “capture” under the LCFS.

F. The proposed Amendments’ increased benchmark stringency—paired with increased, short-term factory farm gas incentives—will supercharge factory farm gas development and associated harms.

Staff’s proposed Amendments are tailor made to exacerbate the problems outlined above. The proposed increased stringency of the CI benchmark will increase LCFS credit prices as demand from deficit generators increases. And the proposed approach to avoided methane crediting sets up a mad dash to build out factory farm CNG and LNG pathways as quickly as possible over the next 5 years to take advantage of up to 30 years of avoided methane crediting.

Staff’s analysis of the value added for different fuels under the Amendments and the projected credit prices highlights how increasing the stringency of the CI benchmark as proposed will incentivize even more factory farm gas production. To begin, higher credit prices mean more economic incentive to build new projects. But the Amendments would not place that benefit equally among fuels. In 2025, under the increased stringency “dairy natural gas” will reap a massively outsized benefit from credit generation, approximately 50% greater than the runner up and many times more than most other fuels.⁵⁵ And by 2045, factory farm gas will be one of only two fuels still seeing a reward from LCFS credit generation.⁵⁶ In other words, increasing the stringency of the LCFS as staff propose will benefit factory farm gas producers the most. That lavish crediting would incentivize increased deployment of digesters and further herd concentration and liquid manure management, with all their associated harms.

Pairing that increased value with staff’s proposal for avoided methane crediting ramps up the incentives even more. The Amendments would create a “break ground” date of December 31,

⁵³ See *supra* section II.B (discussion of manure management and California’s dairy herd). Approximately 86% of LCFS pathways approved for fuel derived from livestock manure in California are located in the San Joaquin Valley while over 99% of digesters funded by the state’s Dairy Digester and Research Development Program are in the San Joaquin Valley. DAIRY DIGESTER RESEARCH AND DEVELOPMENT PROGRAM: PROJECT-LEVEL DATA, *supra* note 8.

⁵⁴ The “cobra effect” refers to a specific anecdote that illustrates how policies can have perverse, unintended consequences. In India, the British Colonial Government implemented a bounty system for bringing dead cobra snakes to administration official to reduce cobra populations in Delhi. At first, the policy appeared successful, but over time the number of dead cobras brought in for bounty continued to increase. Instead of working to capture wild cobras, clever snake catchers simply started breeding cobras to then kill for the bounty. This dynamic has been observed in many contexts. See Ex. 35, Barry Newell & Christopher Doll, *Systems Thinking and the Cobra Effect*, UNITED NATIONS UNIVERSITY (Sept. 16, 2015), <https://perma.cc/2P9A-2H9E>.

⁵⁵ ISOR, *supra* note 42, at 79, Tbl. 15.

⁵⁶ *Id.*

2029, where projects that break ground prior to that date can receive up to 30 years of avoided methane crediting.⁵⁷ But for factory farm CNG or LNG projects that do not break ground before December 31, 2029, the Amendments would eliminate their credit generation potential as of December 31, 2040.⁵⁸ Similarly, pathways for biomethane used to produce hydrogen that break ground before December 31, 2029, are eligible for up to 30 years of avoided methane crediting, while those that do not will be limited to credit generation through 2045.⁵⁹ Finally, the Amendments do not place a restriction on pathways where factory farm gas is burned in internal combustion engines to produce electricity, apparently leaving that fuel type eligible for up to 30 years of avoided methane crediting regardless when the project broke ground or applies for a pathway.

In sum, the Amendments dramatically ramp up the short-term pressure to build out factory farm gas production before the cutoff date. Comparing approximately 10 years of credit generation with 30 years of unrestrained avoided methane crediting would likely mean a difference of many millions of dollars in profits over the life of a project. Looking to the value added by expected credit prices under the Amendments, by 2040 and 2045 factory farm gas pathways will be unique in their ability to continue reaping a profit from the LCFS. This outsized benefit would be even greater for burning factory farm gas for electricity since a project could be eligible for 30 years of avoided methane crediting even if the project broke ground in 2040, all while the value added for most other fuels in the program declines into negative terrain by then.⁶⁰ These projections buttress staff's scheme to use the LCFS to prop up a factory farm gas economy in perpetuity by continuing to lavishly reward factory farm gas to electricity pathways without end and subsidizing factory farm gas infrastructure so that it is available for "hard to decarbonize" stationary sources beyond 2045.

Thus, instead of eliminating avoided methane crediting in this rulemaking as Commenters and others have requested for years now, staff have put forward Amendments that super charge short-term factory farm gas production, lock these fuels in with the most lucrative treatment as stringency increases, and massively encourage burning factory farm gas in dirty internal combustion engines in the San Joaquin Valley for the long-term.

III. PROCEDURAL BACKGROUND

A. Petition for Rulemaking

More than two years ago, on October 27, 2021, a group of advocates, researchers, and public interest organizations concerned about factory farm pollution and environmental injustice in the San Joaquin Valley ("Petitioners") filed the Petition for Rulemaking to Exclude All Fuels Derived from Biomethane from Dairy and Swine Manure from the Low Carbon Fuel Standard Program ("Petition for Rulemaking"), attached here as Exhibit 1 and incorporated by reference as though fully set forth herein,⁶¹ pursuant to Government Code section 11340.6.

⁵⁷ *Id.* at 29–31.

⁵⁸ *Id.* at 30; Appx. A-1 at 34.

⁵⁹ *Id.* at 30.

⁶⁰ *See id.* at 79, Tbl. 15.

⁶¹ PETITION FOR RULEMAKING, *supra* note 50.

In the Petition for Rulemaking, Petitioners asked CARB to amend the LCFS to exclude all fuels derived from factory farm gas or, in the alternative, to reform the LCFS to account for the full life cycle of factory farm gas production emissions—including all upstream and downstream emissions from activities and inputs at the source dairy and pig factory farms—and exclude non-additional emission reductions that occur as a result of other factory farm gas incentives.

The Petition for Rulemaking set forth three main reasons why CARB was—and continues to be—legally required to grant this relief. First, factory farm gas pathways fail to achieve the maximum technologically feasible and cost-effective emissions reductions, as Assembly Bill 32 (AB 32) requires, because they fail to incorporate proper lifecycle analyses (LCAs), leading to indefensibly low carbon intensity scores and, in turn, an indefensibly high number of credits generated for factory farm gas production. Second, the LCFS fails to ensure that credited emission reductions are additional to reductions that would have otherwise occurred as required by section 38562(d)(2) of the Health & Safety Code. This dynamic has increased—and continues to increase—manure production and industry consolidation and expansion, exacerbating localized pollution and disparate impacts to communities. Thus, CARB has failed—and continues to fail—to achieve the maximum technologically feasible and cost-effective greenhouse gas (GHG) emissions.⁶² Third, factory farm gas pathways fail to maximize additional environmental benefits and interfere with efforts to improve air quality.⁶³

Petitioners also asked CARB to evaluate and amend the LCFS to remedy its disproportionate adverse and cumulative impacts on low-income and Latino/a/e communities in violation of state and federal law.⁶⁴ The Petition for Rulemaking provides three main reasons why CARB was—and continues to be—legally required to grant this relief. First, LCFS credits and the subsequent trading of those credits incentivize activities that result in public health and environmental harms in disproportionately low-income and Latino/a/e communities, particularly in the San Joaquin Valley.⁶⁵ Second, CARB is required to ensure that the LCFS complies with CA 11135, CA 12955, and Title VI of the Civil Rights Act of 1964 to prevent discrimination.⁶⁶ Third, CARB failed to design the LCFS in a manner that is equitable, and CARB fails on an ongoing basis to consider the social costs of GHG emissions and to ensure that the LCFS does not disproportionately impact low-income communities.⁶⁷

Finally, the Petition for Rulemaking asked CARB to address the lack of transparency as to pathways for factory farm gas.⁶⁸ Specifically, there is no way for the public to access trading data to determine the location of facilities purchasing LCFS factory farm credits, and what records are available are heavily redacted.⁶⁹ This makes it difficult to determine potential disparate impacts.⁷⁰

⁶² *Id.* at 10–26.

⁶³ *Id.* at 26–31.

⁶⁴ *Id.* at 31–36.

⁶⁵ *Id.* at 31–34.

⁶⁶ *Id.* at 34–35.

⁶⁷ *Id.* at 35–36.

⁶⁸ *Id.* at 36–37.

⁶⁹ *Id.*

⁷⁰ *Id.*

In response, CARB declined to amend the LCFS, stating that “it is premature to consider amending the LCFS regulation until the Scoping Plan update process has informed how the state’s portfolio approach to climate mitigation may be best structured to deliver cost-effective, technologically feasible, and direct emissions reductions across various sources.”⁷¹ But CARB also stated in its response that it “agrees it is important, as petitioners urge, to ensure the LCFS provides environmental benefits and does not degrade water quality and interfere with efforts to improve air quality in the San Joaquin Valley.”⁷² CARB further affirmed its commitment to ensuring that its programs “focus on environmental justice and environmental integrity.”⁷³ CARB also acknowledged its legal obligation under SB 1383 to “reduc[e] statewide livestock manure methane emissions 40 percent below 2013 levels by 2030.”⁷⁴

B. Petition for Reconsideration

Soon after, on March 25, 2022, Petitioners filed the Petition for Reconsideration of the Denial of the Petition for Rulemaking to Exclude All Fuels Derived from Biomethane from Dairy and Swine Manure from the Low Carbon Fuel Standard Program, attached here as Exhibit 3 and incorporated by reference as though fully set forth herein.⁷⁵

The Petition for Reconsideration emphasized three main reasons why CARB should reconsider and grant the Petition for Rulemaking. The first reason was that CARB’s response to the Petition for Rulemaking neither disputed nor responded to the evidence that including factory farm gas in the LCFS violates applicable law and undermines the purpose and goals of AB 32.⁷⁶ The first piece of evidence is that factory farm gas credits distort and undermine the LCFS.⁷⁷ The second piece of evidence was that the LCFS perversely incentivizes herd expansions, greater geographic concentration of factory farm pollution, and maximum methane generation at factory farms.⁷⁸ The third piece of evidence was that CARB did not dispute and has arbitrarily and capriciously failed to consider the issue of whether the LCFS may allow non-additional reductions from factory farm gas.⁷⁹ The fourth piece of evidence was that factory farm gas causes adverse and disparate environmental impacts.⁸⁰ The second reason for CARB to reconsider and grant the Petition for Rulemaking was that SB 1383 mandates neither the inclusion nor the overvaluation of factory farm gas in the LCFS.⁸¹ The third reason for CARB to reconsider and grant the Petition for Rulemaking was that San Joaquin Valley communities could not wait until 2023 or later for CARB to address the issues raised in the Petition for Rulemaking, which disproportionately harm them.⁸²

⁷¹ Ex. 36, CARB, RESPONSE TO PETITION FOR RULEMAKING TO EXCLUDE ALL FUELS DERIVED FROM BIOMETHANE FROM DAIRY AND SWINE MANURE FROM THE LOW CARBON FUEL STANDARD PROGRAM 2 (Jan. 26, 2022), <https://perma.cc/F8VW-YLGC>.

⁷² *Id.* at 2.

⁷³ *Id.*

⁷⁴ *Id.* at 5.

⁷⁵ PETITION FOR RECONSIDERATION, *supra* note 50.

⁷⁶ *Id.* at 7.

⁷⁷ *Id.*

⁷⁸ *Id.* at 10.

⁷⁹ *Id.* at 16.

⁸⁰ *Id.* at 20.

⁸¹ *Id.* at 32.

⁸² *Id.* at 34.

Petitioners also asked CARB in the Petition for Reconsideration to at least suspend factory farm gas pathway certifications pending an LCFS rulemaking.⁸³ CARB had authority to do this for three reasons. First, the LCFS regulations governing pathway certifications impose no duty on CARB to approve Tier 1 or Tier 2 applications on a specific timeline and also give CARB authority to modify its implementation of factory farm gas credit certification.⁸⁴ Second, CARB’s well to wheels interpretation for biomethane from dairy and pig manure is a matter of agency interpretation and is not codified.⁸⁵ Finally, CARB has a duty to ensure its policies and programs comply with AB 32 and civil rights laws.⁸⁶

In response, CARB denied the Petition for Reconsideration but also acknowledged the “need for continued action and coordination to address the complex issues associated with dairy and livestock operations in the Central Valley[.]”⁸⁷ CARB also acknowledged once again SB 1383’s “**requirement** that CARB adopt and implement regulations to reduce methane emissions from livestock manure management operations and dairy manure management operations to meet the 2030 methane reduction target after January 1, 2024.”⁸⁸ Moreover, CARB admitted that the dairy and livestock sector is only expected to achieve “about half of the emissions reductions needed to achieve the 2030 target.”⁸⁹ CARB also claimed in the denial that the requirements of Health and Safety Code section 38562—including additionality—do not apply to the LCFS, as it is “designed to incentivize increased production of low carbon intensity fuels by rewarding the supply of volumes of such fuels.”⁹⁰ Finally, CARB denied Commenters’ request to suspend factory farm gas pathway certifications pending an LCFS rulemaking.⁹¹

C. Workshop on Methane, Dairies and Livestock, and Renewable Natural Gas in California

At the January 27, 2022, Board meeting, Chair Randolph directed staff to hold “a public workshop specifically on [the issues raised in the Petition for Rulemaking], ideally within the next few months, and then come back to the Board with an item after that public workshop, and -- where staff could share the findings and the discussion and really kind of allow the Board to hear about the issues in more detail and provide guidance in terms of moving forward with a rulemaking process.”⁹²

⁸³ *Id.* at 35.

⁸⁴ *Id.* at 36.

⁸⁵ *Id.* at 37.

⁸⁶ *Id.* at 38.

⁸⁷ Ex. 37, CARB, RESPONSE TO PETITION FOR RECONSIDERATION OF THE DENIAL OF THE PETITION FOR RULEMAKING TO EXCLUDE ALL FUELS DERIVED FROM BIOMETHANE FROM DAIRY AND SWINE MANURE FROM THE LOW CARBON FUEL STANDARD PROGRAM 4 (Apr. 25, 2022), <https://perma.cc/86VC-LVP9>.

⁸⁸ *Id.* at 3 (emphasis added).

⁸⁹ *Id.*

⁹⁰ *Id.* at 2, n.4.

⁹¹ Ex. 38, CARB, RESPONSE TO REQUESTS TO DENY OR DELAY CONSIDERATION OF LOW CARBON FUEL STANDARD (LCFS) PATHWAY CERTIFICATIONS (Apr. 26, 2022), <https://perma.cc/ZZB8-KFTM>.

⁹² Ex. 39, Transcript of Videoconference Meeting, State of California Air Resources Board at 172 (Jan. 27, 2022), <https://perma.cc/7AHY-V5TD>.

Staff held that workshop on March 29, 2022,⁹³ and used it primarily to platform industry.⁹⁴ Staff never brought the findings and discussion back to the board, as the Chair directed. Staff chose instead to ignore the Chair’s unambiguous direction to at least acknowledge and present concerns from impacted residents to the Board.

D. Comments on the 2022 Scoping Plan

Commenters engaged throughout the Scoping Plan process, submitting written comments,⁹⁵ which are incorporated by reference as though fully set forth herein, and providing verbal testimony at Scoping Plan Board meetings.⁹⁶ Commenters critiqued the Scoping Plan’s reliance on manure digestion as a means of addressing livestock pollution.

The Environmental Justice Advisory Committee (EJAC) submitted recommendations to CARB regarding the Scoping Plan, and some of those recommendations specifically concern factory farm gas in the LCFS.⁹⁷ For example, EJAC recommended that CARB “[e]valuate whether to remove livestock and dairy gas from the LCFS based on the role of the LCFS in incentivizing herd concentration near pollution-burdened communities and in pollution-burdened regions, accurate GHG emissions analyses, and conformity with additionality requirements.”⁹⁸ EJAC further recommended that CARB “[r]eevaluate the carbon intensity value of livestock and dairy gas based on a full life cycle analysis, an analysis of additionality for each project, and relevant regulatory programs.”⁹⁹

CARB did not address any of these concerns in the Scoping Plan, and the staff’s proposed Amendments similarly ignore those concerns.

⁹³ Ex. 40, *Workshop on Methane, Dairies and Livestock, and Renewable Natural Gas in California*, CARB, <https://perma.cc/SJC4-GFDG>; see *Short-Lived Climate Pollutants Program: Meetings & Workshops*, CARB, <https://perma.cc/5G24-6LGZ> (see details and materials re: “Workshop on Methane, Dairies and Livestock, and Renewable Natural Gas in California”).

⁹⁴ Ten of the twenty-six presentations were delivered directly by industry representatives. These ten are: (1) Perspectives on the future of Dairies in California, Paul Sousa, Western United Dairies; (2) Manure management methane emissions reduction strategies, Mark Stoermann, Newtrient LLC; (3) Overview digester operations at California dairy farms, Neil Black, California Bioenergy LLC; (4) Overview of environmental protections for California digesters, David De Groot, 4Creeks, Inc.; (5) Funding of dairy methane mitigation projects, Sam Wade, Coalition for Renewable Natural Gas; (6) Perspectives on dairy management decisions, Joey Airoso, Airoso Dairy; (7) Perspectives on dairy management decisions, Diana Giacomini Hagan, Giacomini Dairy; (8) Subgroup Findings: Fostering Markets for Non-Digester Projects, J.P. Cativiela, Dairy Cares; (9) Subgroup Findings: Fostering Markets for Digester Projects, Michael Boccadoro, Dairy Cares; (10) Considerations for Methane Emissions Reduction Incentives and Regulation, Michael Boccadoro, Dairy Cares.) *Workshop on Methane, Dairies and Livestock, and Renewable Natural Gas in California*, *supra* note 93.

⁹⁵ Ex. 41, LEADERSHIP COUNSEL FOR JUSTICE AND ACCOUNTABILITY ET AL., COMMENTS ON THE 2022 DRAFT SCOPING PLAN (June 22, 2022).

⁹⁶ This engagement includes members of Central Valley Defenders of Clean Water & Air and other impacted residents of the San Joaquin Valley who traveled to attend the June 2022, Scoping Plan Board meeting.

⁹⁷ Ex. 42, ENVIRONMENTAL JUSTICE ADVISORY COMMITTEE 2022 SCOPING PLAN RECOMMENDATIONS 16–17 (September 30, 2022), <https://perma.cc/M4CC-MFKA>.

⁹⁸ *Id.* at 16.

⁹⁹ *Id.*

E. Comments in Opposition to Tier 2 Pathway Applications for Factory Farm Gas

To date, Commenters and/or their allies have submitted comments in opposition to seventy-six Tier 2 applications for pathways for factory farm gas, and those comments are incorporated by reference as though fully set forth herein.¹⁰⁰ In those comments, Commenters raised concerns about the consequences of the LCFS's monetization of manure, including environmental injustice, environmental degradation, lack of additionality, and inadequate LCA. As many of these pathway applications illustrate, the LCFS is a moneymaker for some of the largest factory farms in California and beyond, often in regions already overburdened with agricultural pollutants. CARB has the certified Tier 2 applications over Commenters' objections.

F. Engagement in the LCFS Rulemaking

Commenters have been heavily engaged in the LCFS rulemaking process and have urged CARB to reform the LCFS every step of the way, including by eliminating avoided methane crediting in 2024. For example, Commenters submitted comments in response to the May 31 and June 1, 2023, community workshop, and those comments are incorporated by reference as though fully set forth herein.¹⁰¹ At that same workshop, Dr. Michael Wara presented "Simulating an 'EJ Scenario' for the Low Carbon Fuel Standard Rule update using the ARB CATS Model."¹⁰² This presentation illustrated the feasibility of LCFS policy changes that would advance air quality, climate, and environmental justice goals ("the EJ Scenario") without massive credit generation from factory farm gas production.¹⁰³ The EJ Scenario Dr. Wara presented assumed the end of avoided methane crediting in 2024.

After that workshop, on August 28, 2023, EJAC passed a resolution recommending that, among other things, CARB formally consider the EJ Scenario as a regulatory alternative in the LCFS rulemaking process; eliminate avoided methane crediting effective January 1, 2024; conduct a full accounting of GHG and air pollution emissions associated with pathways relying on the

¹⁰⁰ *2023 LCFS Pathways Requiring Public Comments*, CARB, <https://ww2.arb.ca.gov/resources/documents/2023-lcfs-pathways-requiring-public-comments> (applications B0514, B0461, B0459, B0490, B0473, B0422, B0403, B0396, B0400, B0450, B0438, B0383, B0430, B0401, B0393, B0404, B0382, B0369); *2022 LCFS Pathways Requiring Public Comments*, CARB, <https://ww2.arb.ca.gov/resources/documents/lcfs-pathways-requiring-public-comments> (applications B0370, B0371, B0347, B0345, B0392, B0391, B0385, B0366, B0352, B0353, B0311, B0315, B0346, B0338, B0282, B0349, B0360, B0350, B0373, B0348, B0308, B0250, B0310, B0307, B0283, B0215, B0216, B0217, B0280); *2021 LCFS Pathways Requiring Public Comments*, CARB, <https://ww2.arb.ca.gov/2021-lcfs-pathways-requiring-public-comments> (applications B0218, B0242, B0207, B0220, B0214, B0198, B0185, B0175, B0197, B0173, B0166, B0163, B0148); *2020 LCFS Pathways Requiring Public Comments*, CARB, <https://ww2.arb.ca.gov/resources/documents/2020-lcfs-pathways-requiring-public-comments> (applications B0127, B0096, B0097, B0109, B0108, B0072, B0098, B0059, B0089); *2019 LCFS Pathways Requiring Public Comments*, CARB, <https://ww2.arb.ca.gov/resources/documents/2019-lcfs-pathways-requiring-public-comments> (applications B0019, B0010, B0060, B0058, B0037, B0038, B0019); *see* Ex. 43, CARB Certified Pathways Spreadsheet (last updated Feb. 9, 2024).

¹⁰¹ Ex. 44, COMMENTS ON LOW CARBON FUEL STANDARD COMMUNITY WORKSHOPS (June 14, 2023).

¹⁰² Ex. 45, Michael Wara et al., Stanford Climate and Energy Policy Program, Woods Institute for the Environment, *Simulating an "EJ Scenario" for the Low Carbon Fuel Standard Rule update using the ARB CATS Model* (May 31, 2023), <https://perma.cc/GU9C-R8PC> (PowerPoint presentation).

¹⁰³ *Id.*

production of fuel from livestock and dairy manure; and eliminate credit generation for pathways relying on the production of fuel from livestock and dairy manure for emissions reductions that otherwise would have occurred or were legally or contractually required to occur.¹⁰⁴

Commenters also provided verbal testimony at the Board meeting on September 28, 2024, and that testimony is incorporated by reference as though fully set forth herein. For example, Commenter Leadership Counsel for Justice & Accountability urged the Board to end avoided methane crediting in 2024 and to adopt Senate Bill 1383 regulations.¹⁰⁵ Leadership Counsel for Justice & Accountability also presented comments from a resident in Pixley who was unable to attend and urged CARB to regulate dairies.¹⁰⁶ Commenter Food & Water Watch addressed herd size and consolidation incentives created by avoided methane crediting and urged the Board to end avoided methane crediting in 2024.¹⁰⁷ Food & Water Watch also urged direct regulation under Senate Bill 1383.¹⁰⁸ Nonetheless, Executive Officer Cliff stated that CARB has no plans to initiate Senate Bill 1383 direct regulation in 2024.¹⁰⁹

In its analysis supporting the proposed Amendments, CARB staff failed to address the concerns laid out in the Petition for Rulemaking, the Petition for Reconsideration, the Workshop on Methane, Dairies and Livestock, and Renewable Natural Gas in California, Comments on the 2022 Scoping Plan, legion comments in opposition to Tier 2 pathway applications for factory farm gas, and throughout Commenters' engagement in the LCFS rulemaking. CARB staff has also ignored the EJAC resolution and recommendations and rebuffed the EJ Scenario. In sum, CARB has failed to give any consideration to the extremely well-documented harms and environmental injustice that it is causing via its monetization of factory farm pollution in the LCFS. Instead, CARB is doubling down in the proposed Amendments and making matters even worse.¹¹⁰

IV. Necessary Changes to the Proposed LCFS Amendments

CARB must make changes to the proposed LCFS amendments. First, CARB must account for the true carbon intensity of factory farm gas. Second, the LCFS is a market-based compliance mechanism and, as such, CARB must ensure the validity of LCFS greenhouse gas emissions reductions pursuant to state law. Third, CARB may not attempt to use the LCFS Amendments to achieve the Senate Bill 1383 methane reduction mandate. Fourth, CARB may not attempt to use the LCFS Amendments to implement the 2022 Scoping Plan to achieve post-2030 policies and the 2045 target set by Assembly Bill 1279. Finally, CARB must ensure that the proposed Amendments do not violate state and federal civil rights and fair housing laws.

¹⁰⁴ Ex. 46, ASSEMBLY BILL 32 ENVIRONMENTAL JUSTICE ADVISORY COMMITTEE (EJAC) DRAFT RECOMMENDATIONS TO THE CALIFORNIA AIR RESOURCES BOARD (CARB) ON THE LOW CARBON FUEL STANDARD REGULATION UPDATES, DRAFT VERSION 2: AUGUST 28, 2023, AMENDED LANGUAGE HIGHLIGHTED BASED ON 8/25/2023 EJAC DISCUSSION (Aug. 28, 2023), <https://perma.cc/Y3NN-WADG>.

¹⁰⁵ Ex. 47, Transcript of Videoconference Meeting, State of California Air Resources Board at 195 (Sept. 28, 2023), <https://perma.cc/3D4W-QQC5>.

¹⁰⁶ *Id.* at 231–32 (“[CARB] staff has ignored us, their staff has refused to consider our concerns. My community can’t wait. It won’t breathe because of your choices. Do your duty, regulate the state’s biggest methane emitter.”).

¹⁰⁷ *Id.* at 289–90.

¹⁰⁸ *Id.*

¹⁰⁹ *See id.* at 81 (Executive Officer Cliff’s statement that “We don’t currently have a rule planned for 2024.”).

¹¹⁰ *See supra* section II.F.

A. CARB must account for the true carbon intensity of factory farm gas.

The proposed rulemaking package dramatically miscalculates the carbon intensity (“CI”) of factory farm gas, resulting in extremely negative CI values that bear little relationship to the real-world climate footprint of these fuels. CARB has certified some factory farm gas projects with CIs lower than $-750 \text{ gCO}_2\text{eq/MJ}$.¹¹¹ This flawed accounting distorts the LCFS and causes severe consequences for human health, the state’s clean transportation goals, and agriculture. The extremely negative CIs for factory farm gas fuels are based on avoided methane crediting and an artificially truncated lifecycle analysis (“LCA”). To remedy these problems, CARB must eliminate avoided methane crediting in this rulemaking and revise the LCA parameters in the proposed simplified Tier 1 calculators and CA-GREET4.0.

As discussed above, Commenters first brought these issues to CARB’s attention in 2021. But despite growing concern from environmental justice advocates, clean transportation advocates, scientists, academics, and CARB Board Members over the ensuing years, the proposed rulemaking would lock these erroneous and misleading CI calculations into the LCFS. In fact, staff intends this rulemaking to supercharge the number of factory farm gas fuel producers that will benefit from this faulty accounting for years to come. Were CARB to adopt staff’s proposal it would do so counter to science and common sense and would make the perverse incentives that currently plague the LCFS even worse.

1. Avoided methane crediting is based on faulty assumptions and exacerbates GHG emissions.

Avoided methane crediting should be eliminated in this rulemaking because it is premised on flawed assumptions and is having severe and counterproductive effects in the real world, both in California and beyond. By lavishly monetizing GHG emissions at factory farms, avoided methane crediting encourages the very practices that generate manure methane emissions in the first place. The policy counterproductively distracts from and disincentivizes methane *avoidance* despite readily available tools and programs designed for that purpose.¹¹² The result on the ground is an industry dependent on “capturing” the intentional and increased climate emissions at the largest factory farms to generate LCFS credits. CARB’s experiment with avoided methane crediting shows that the policy is detrimental to the LCFS and California’s commitments to climate equity and environmental justice, and it must be eliminated from the program.

First, free methane venting at factory farms is not a valid baseline. As explained below, CARB has a duty to directly regulate manure methane emissions from California dairies under SB 1383¹¹³ and therefore the baseline must reflect regulatory reality. And CARB knows there are feasible, available, and more effective ways to reduce manure methane emissions than attempting

¹¹¹ E.g., Ex. 48, CARB, TIER 2 PATHWAY APP. B016301 (certified June 21, 2021), <https://perma.cc/L982-4M9H>.

¹¹² For example, California’s Alternative Manure Management Program. *Alternative Manure Management Program*, CDFA, <https://perma.cc/742V-KGW3> (last visited Feb. 20, 2024).

¹¹³ Cal. Health & Safety Code § 39730.7.

to capture and burn emissions after the fact.¹¹⁴ Therefore, the appropriate baseline would reflect CARB’s regulatory authority to directly regulate manure methane emissions to achieve “direct emission reductions” as prioritized by AB 197.

Second, CARB cannot ignore that avoided methane crediting results in the perverse incentives to create more methane at factory farms as described in the Factual Background, and in the process more co-pollutants that contaminate the local environment. The policy creates pressure to house more animals in larger and larger confinement facilities using the most climate polluting manure management practices. In the process, avoided methane crediting undermines climate progress, causes environmental injustice, and distorts agricultural markets.

Avoided methane crediting has become a festering problem for the integrity of the LCFS and CARB’s climate and environmental justice efforts. It is time for CARB to fix its mistake and remove this detrimental policy.

a) Perpetual free venting of manure methane from factory farms is not a valid baseline.

Avoided methane crediting relies on the assumption of perpetual free venting of methane manure from the most polluting factory farm practices. This assumption is arbitrary because CARB is legally *obligated* to consider and have a preference for direct, regulatory reductions in manure methane emissions.¹¹⁵ As explained below, CARB cannot use the LCFS in place of absolute, direct reductions under SB 1383; it likewise cannot set a baseline for determining factory farm gas fuels’ CI under the LCFS that pretends SB 1383 does not exist.

Furthermore, it is arbitrary for CARB to assume that raising livestock must result in massive manure methane emissions. It was only when factory farms began structuring their operations to expand in size and reduce costs by relying on liquification, storage in lagoons, and disposal via land application that manure methane became a major climate issue.¹¹⁶ For example, manure allowed to decompose on a pasture or handled and managed in a dry system does not emit meaningful methane. The reason is simple: methane is generated in anaerobic environments. Allow manure to decompose in the presence of oxygen, and methanogenic microorganisms will not proliferate and thus will not produce methane and other gasses.¹¹⁷ But as the California dairy industry expanded into larger and larger factory farms, it “tend[ed] to utilize more liquid-based systems to manage ... and store manure. Thus, the shift toward larger dairy cattle and swine

¹¹⁴ For example, CARB knows that solid separation before lagoon or digester storage effectively reduces methane and that “when dry systems are used ... emissions can be dramatically reduced – perhaps by more than 90 percent.” Ex. 49, CAL. DEPT. FOOD & AGRIC., RECOMMENDATIONS FOR SHORT-LIVED CLIMATE POLLUTANTS: AN AGRICULTURAL WORKGROUP REPORT FOR THE CALIFORNIA AIR RESOURCES BOARD AND CALIFORNIA DEPARTMENT OF FOOD AND AGRICULTURE 12–13 (June 2015), <https://perma.cc/9CEA-U4NX>.

¹¹⁵ SB 1383; AB 197.

¹¹⁶ Ex. 50, U.S. ENVTL. PROT. AGENCY, DRAFT INVENTORY OF U.S. GREENHOUSE GAS EMISSIONS AND SINKS: 1990-2022 5-11 to 5-13, <https://perma.cc/UX33-BZLQ>.

¹¹⁷ E.g., Ex. 51, *Practices to Reduce Methane Emissions from Livestock Manure Management*, U.S. ENVTL. PROT. AGENCY, <https://perma.cc/6S8U-RQMV> (last visited Feb. 20, 2024) (“In general, liquid manure management systems lead to anaerobic conditions and increased methane production, and switching to practices that manage manure in drier, aerobic conditions reduced methane emissions.”).

facilities since 1990 has translated into an increasing use of liquid manure management systems, which have higher potential CH⁴ emissions than dry systems.”¹¹⁸

And now that CARB has structured incentives, through avoided methane crediting, to encourage and entrench liquid manure systems, CARB’s use of a baseline that it itself has manufactured due to its failure to adopt direct regulations has become circular and self-fulfilling. Factory farms intentionally and unrestrictedly polluting the climate cannot be used as the standard by which progress is measured.

The LCFS did not always have this problem. For years, CARB did not incentivize the production of GHGs from manure by monetizing its deliberate creation. Under the prior approach, factory farm gas fuel could generate credits but through more accurate, positive CI values similar to landfill biomethane. CARB did not assume the perpetual, unregulated free venting of methane from factory farm cesspools, instead it used a capture-and-destroy baseline that did not incentivize the intentional production of biogases.¹¹⁹ This responsible approach provided opportunities for reasonable credit generation but did not lead to such windfall profits that agricultural operations structured themselves to profit off the LCFS.

But when CARB adopted avoided methane venting, it transformed factory farms utilizing liquid manure management systems into natural and unavoidable features of the landscape, and thus mitigating any amount of their emissions acts as a carbon sink in the environment. This approach transformed factory farm gas into the most lucrative and incentivized source of fuel in the entire LCFS. While this was never a valid framework for achieving California’s climate objectives, CARB’s obligation to actually regulate these emissions makes it patently arbitrary moving forward. California will never achieve SB 1383’s goal of a 40% manure methane reduction so long as CARB assumes, accepts, and encourages the worst from the dairy industry.

b) CARB cannot ignore the perverse incentive to expand pollution generation for purported methane capture.

CARB cannot ignore that avoided methane crediting causes factory farms to expand and structure their operations in ways that maximize methane pollution. This is a critical flaw in CARB’s treatment of factory farm gas because intentionally produced methane emissions are always climate intensive.¹²⁰ CARB cannot rationally amend the LCFS on the belief that factory farms will not respond to the strong incentives avoided methane crediting sends when CARB has simultaneously shown no indication of reining in methane emissions with mandatory, regulatory reductions.¹²¹ In other words, CARB is using a one-way ratchet, and the result is predictable.

¹¹⁸ DRAFT INVENTORY OF U.S. GREENHOUSE GAS EMISSIONS AND SINKS: 1990-2022, *supra* note 116, at 5-12 to 5-13.

¹¹⁹ See Ex. 52, CARB, FINAL REGULATIONS ORDER, <https://perma.cc/N254-ZSBM> (2015 LCFS Regulations Lookup Table – CNG004).

¹²⁰ Ex. 53, Emily Grubert, *At Scale, Renewable Natural Gas Systems Could be Climate Intensive: The Influence of Methane Feedstock and Leakage Rates*, 15 ENV’T RESEARCH LETTERS (2020), <https://doi.org/10.1088/1748-9326/202002020202>.

¹²¹ In fact, CARB has disclosed it has no such plans. See Transcript of Videoconference Meeting, *supra* note 105, at 81.

CARB must amend the LCFS to eliminate avoided methane crediting.

2. *CARB fails to require a full lifecycle analysis for factory farm gas fuels.*

CARB further distorts the CI of factory farm fuels by failing to account for significant up and downstream GHG emissions directly associated with production of the fuel. The Amendments fail to address this flawed system boundary and continue to leave out known and significant emissions.¹²² Ignoring GHG emissions directly associated with factory farm gas production arbitrarily pushes CI values for these fuels even lower and in effect infuses the LCFS with bogus credits that do not represent real emissions reductions.

Both up and downstream GHG emissions must be added to the LCA for factory farm gas fuels. Emissions from factory farm operations upstream of liquid manure collection must be included in the LCA because the LCFS regulations define a “fuel pathway” to include “a complete well-to-wheel analysis.”¹²³ And when a project applies for an LCFS Tier 2 pathway, the application’s life cycle analysis must take into account “feedstock production.”¹²⁴ For factory farm gas production, “feedstock” is manure from confined animals and thus “feedstock production” must include consideration of the processes and animals that produced the methane-emitting manure. CARB may believe that upstream emissions are attributable to other products from factory farming, like milk or meat, but the “manure gold rush” now in effect mandates that CARB treat liquified manure emitting methane as a co-product of raising animals in these conditions, especially when the LCFS distorts agricultural markets such that herds may be larger than justified by agricultural production alone.¹²⁵

But CARB has failed to require a full upstream LCA and arbitrarily refuses to correct that in the proposed Amendments. Under staff’s proposal, the system boundary for these fuels would continue to exclude all emissions associated with raising, feeding, housing, and otherwise sustaining the concentrated and confined herds that produce factory farm gas feedstock. These emissions include but are not limited to enteric emissions and those from the production, transport, and storage of animal feed. Without manure collection at animal confinement facilities, there is no gas production; and with no animals in confinement there is no manure collection. Therefore, factory farm operations and particular manure management systems are inextricably part of “feedstock production.”

Downstream emissions must be included in the LCA because anaerobic digestion of manure results in digestate that is more prone to emitting GHGs than undigested manure. The

¹²² CARB has adopted portions of the Compliance Offset Protocol Livestock Projects established under the California Cap-and-Trade program, including the LCA system boundary, and those parameters are manifested in the Tier 1 simplified calculators and CA-GREET4.0. See Ex. 54, CAL. EPA, COMPLIANCE OFFSET PROTOCOL LIVESTOCK PROJECTS Fig. 4.1 (Nov. 14, 2014), <https://perma.cc/B3HF-F353>.

¹²³ Cal. Code Regs. Tit. 17 § 95481(a)(66).

¹²⁴ Cal. Code Regs. Tit. 17 § 95488.7(a)(2)(B).

¹²⁵ See Ex. 55, Jeremy Martin, *Something Stinks: California Must End Manure Biomethane Accounting Gimmicks in Its Low Carbon Fuel Standard*, UNION OF CONCERNED SCIENTISTS, THE EQUATION (Feb. 15, 2024), <https://perma.cc/5DRT-KTE7>.

LCFS regulations require consideration of “waste generation, treatment and disposal.”¹²⁶ Yet, CARB has failed to include emissions from the “generation, treatment and disposal” of digestate in factory farm gas fuels’ CI values. As the U.S. Department of Agriculture’s Natural Resources Conservation Service recognizes in its Conservation Practice Standard for anaerobic digestion, “digestate has increased potential for some air and nutrient emissions compared to raw manure.”¹²⁷ This includes up to a threefold increase in methane emissions during digestate handling and storage,¹²⁸ as well as increased nitrous oxide emissions.¹²⁹ Despite Commenters and others repeatedly presenting compelling scientific evidence to CARB staff that the storage and land application of digestate can increase nitrous oxide and other emissions, the proposed Amendments retain an exclusion of nitrous oxide emissions from storage or land application of digestate that is arbitrary and not supported by any evidence.¹³⁰

CARB’s deliberate indifference to these known, increased GHG emissions resulting from factory farm gas production is arbitrary and without support.

3. *Inaccurate CI values for factory farm gas threaten to undermine green hydrogen production.*

How CARB calculates CI for factory farm gas also threatens to undermine any hope of a “green” hydrogen future in California.¹³¹ CARB proposes to use the LCFS to build up and entrench factory farm gas production, with a goal of eventually “shift[ing] biomethane to the production of renewable hydrogen or for use in other sectors by 2045.”¹³² Using the same flawed carbon intensity analyses for hydrogen produced from combusted biogas or steam methane reformation paired with factory farm gas offset credits will disadvantage and undercut truly green, electrolytic hydrogen produced from solar, wind, or other clean energy sources. This is because producing dirty hydrogen and buying factory farm gas credits results in *lower* carbon intensity hydrogen on paper than solar electricity used for electrolysis.

Existing hydrogen pathways exemplify this perversity. For example, CARB recently certified several pathways for hydrogen produced by steam methane reformation of fossil natural

¹²⁶ Cal. Code Regs. Tit. 17 § 95488.7(a)(2)(B).

¹²⁷ CONSERVATION PRACTICE STANDARD CODE 366: ANAEROBIC DIGESTER, *supra* note 24.

¹²⁸ Ex. 56, Lena K.K. Rodhe et al., *Greenhouse Gas Emissions from Storage and Field Application of Anaerobically Digested and Non-Digested Cattle Slurry*, 199 AG., ECOSYSTEMS & ENV’T 358 (Jan. 2015), <https://perma.cc/LE8U-W87U>; Ex. 57, Hambaliou Baldé et al., *Methane Emissions from Digestate at An Agricultural Biogas Plant*, 216 BIORESOURCES TECH. 914 (Sept. 2016), <https://perma.cc/BVQ9-XKN2>.

¹²⁹ Ex. 58, Michael A. Holly et al., *Greenhouse Gas and Ammonia Emissions from Digested and Separated Dairy Manure During Storage and After Land Application*, 239 AGRIC, ECOSYSTEMS & ENV’T 410, 411 (Feb. 2017), <https://www.sciencedirect.com/science/article/pii/S0167880917300701>.

¹³⁰ COMPLIANCE OFFSET PROTOCOL LIVESTOCK PROJECTS, *supra* note 122, at 16; Ex. 59, CARB, TIER 1 CI CALCULATOR FOR DAIRY AND SWINE MANURE BIOMETHANE, INSTRUCTION MANUAL (proposed Dec. 19, 2023), <https://perma.cc/AY6F-Y6UP> (only discussing avoided emissions from land application without reference to potentially increased emissions).

¹³¹ See Ex. 60, FOOD & WATER WATCH, HYDROGEN: THE GOOD, THE BAD, THE UGLY (Apr. 2021), <https://perma.cc/AEW5-G5G7> (defining green hydrogen as a “sustainable energy source” that is “produced through electrolysis (splitting water into hydrogen and oxygen) using renewable electricity like wind or solar”).

¹³² ISOR, *supra* note 42, at 30.

gas paired with factory farm gas credits from dairies in New York state.¹³³ While this is for the production of dirty, fossil fuel-based hydrogen, CARB certified CI values ranging from -102.79 to -181.75, many times more lucrative than zero emission hydrogen production using solar or wind that would receive at best a CI of zero.¹³⁴ And CARB staff have certified other dirty hydrogen pathways with even more extreme CI values.¹³⁵ As staff make clear, this is the supposedly “renewable hydrogen” future that the proposed Amendments are designed to lock in.

4. *Real world monitoring shows that factory farm digesters are ineffective at the one thing they are purported to do: capture methane.*

CARB is also vastly overestimating the effectiveness of factory farm digesters, calling into question fundamental assumptions built into how CARB assesses these fuels. For example, CARB uses a default methane capture efficiency of 95% for lagoon digesters and 98% for fully enclosed vessels, unless a pathway applicant discloses otherwise.¹³⁶ Were these default values remotely close to real-world conditions, they would align with real-world monitoring of LCFS-supported dairy digesters. But they do not. Instead, the actual monitoring data are showing that LCFS-supported digesters are relatively *ineffective* at total methane capture, with one peer-reviewed study finding no statistically significant difference between methane emissions at California dairies with and without covered lagoon digesters.¹³⁷ And an analysis of Carbon Mapper data conducted by Food & Water Watch shows that fifteen LCFS-supported dairy digesters continue to have massive methane plumes despite installation of a digester and certification to generate LCFS credits.¹³⁸ Therefore, real-world conditions appear to disagree significantly with CARB’s assumptions regarding methane capture and loss to the atmosphere from factory farm digester operations.

B. The LCFS is a market-based compliance mechanism and, as such, CARB must ensure the validity of LCFS greenhouse gas emissions reductions pursuant to state law.

The LCFS bears all the identifying features of a market-based compliance mechanism. Accordingly, CARB must ensure that greenhouse gas emissions reductions are real, permanent, quantifiable, verifiable, enforceable, and additional. CARB initially adopted the LCFS as a discrete early action measure. But now CARB insists that the LCFS remains an early action measure for

¹³³ Ex. 61, CARB, TIER 2 PATHWAY APP. B0494, STAFF SUMMARY (updated Dec. 29, 2023), <https://perma.cc/L8AX-RSFT>; *see supra* note 100, CARB, Certified Pathways Spreadsheet (listing App. B0392 certified Dec. 22, 2022).

¹³⁴ *See* TIER 2 PATHWAY APP. B0494, STAFF SUMMARY, *supra* note 133; Certified Pathways Spreadsheet, *supra* note 100.

¹³⁵ Ex. 62, CARB, TIER 2 PATHWAY APP. B0392, STAFF SUMMARY (posted for comment Nov. 28, 2022), <https://perma.cc/5CKU-ZE66>; *see* CARB Certified Pathways Spreadsheet, *supra* note 100 (listing App. B0392 certified Dec. 22, 2022, with CI values as low as -308.67 for dirty hydrogen).

¹³⁶ Ex. 63, CARB, PROPOSED TIER 1 CI CALCULATOR FOR DAIRY AND SWINE MANURE BIOMETHANE, Reference, Table A.3. Biogas Collection Efficiency by Digester Type, <https://perma.cc/N7X2-KCXR> (release date Dec. 19, 2023).

¹³⁷ Ex. 64, N.T. Vechi et al., *Ammonia and Methane Emissions from Dairy Concentrated Animal Feeding Operations in California, Using Mobile Optical Remote Sensing*, 293 ATMOSPHERIC ENV'T. 119448 (2023), <https://www.sciencedirect.com/science/article/pii/S1352231022005131>.

¹³⁸ Ex. 65, FOOD & WATER WATCH, THE PROOF IS IN THE PLUMING: FACTORY FARM BIOGAS HAS NO PLACE IN THE LOW CARBON FUEL STANDARD (Feb. 2024), <https://perma.cc/MN7Q-HNEV>.

which CARB need not ensure additionality,¹³⁹ despite the fact that the LCFS is no longer discrete or early. CARB was never authorized to dodge the safeguards the Legislature thought necessary for market-based compliance mechanisms by transforming early action measures into long-term, evolving, and expansive programs. But this is precisely what CARB did in 2018 when it amended the program to establish carbon intensity benchmarks and greenhouse gas emissions beyond the 2020 statewide greenhouse gas emissions limit. And CARB now proposes amendments to increase the 2018 amendments' carbon intensity benchmarks between 2020 and 2030 and establish new carbon intensity benchmarks between 2031 and 2045. The early action measure provision of AB 32 does not authorize CARB's 2018 amendments for post-2020 emissions reductions or the proposed Amendments. The LCFS today, as an AB 32 program authorized by Cal. Health & Safety Code § 38562 and not an early action measure under section 38560.5, is subject to the Legislature's command to ensure that market-based compliance mechanisms provide real, permanent, quantifiable, verifiable, enforceable, and additional reductions.

1. The LCFS is a market-based compliance mechanism, and any greenhouse gas emissions reductions shall be real, permanent, quantifiable, verifiable, enforceable, and additional.

Section 38562(d)(1) of the Health & Safety Code requires that any regulation CARB adopts pursuant to Parts 4 and 5 of Division 25.5 of the Health & Safety Code shall ensure that any reduction in greenhouse gas emissions is real, permanent, quantifiable, verifiable, and enforceable. Moreover, any market-based compliance mechanism adopted pursuant to Part 5 must ensure the reductions are “in addition to any greenhouse gas emission reduction otherwise required by law or regulation, and any other greenhouse gas emission reduction that otherwise would occur.”¹⁴⁰ The LCFS unquestionably meets the definition of a market-based compliance mechanism.¹⁴¹ The LCFS imposes an economy-wide limit on the carbon intensity of transportation fuels, requires any fuel producer to meet the carbon intensity benchmark, and any producer that does not meet their obligation—a deficit holder—must purchase credits to lower the overall carbon intensity of their fuels to comply with the LCFS.¹⁴² And CARB maintains the LCFS credit bank, acting as a market maker between the purchasers and sellers of LCFS credits.¹⁴³

CARB itself described the LCFS as a market-based mechanism when promulgating amendments to the LCFS:

¹³⁹ See RESPONSE TO PETITION FOR RECONSIDERATION OF THE DENIAL OF THE PETITION FOR RULEMAKING TO EXCLUDE ALL FUELS DERIVED FROM BIOMETHANE FROM DAIRY AND SWINE MANURE FROM THE LOW CARBON FUEL STANDARD PROGRAM, *supra* note 87, at 2, n.4.

¹⁴⁰ Health & Safety Code § 38562(d)(2).

¹⁴¹ “Market-based compliance mechanism means either of the following: (1) A system of market-based declining annual aggregate emissions limitations for sources or categories of sources that emit greenhouse gases; and (2) Greenhouse gas emissions exchanges, banking, credits, and other transactions, governed by rules and protocols established by the state board, that result in the same greenhouse gas emission reduction, over the same time period, as direct compliance with a greenhouse gas emission limit or emission reduction measure adopted by the state board pursuant to this division.” Health & Safety Code § 38606(k); see *Rocky Mountain Farmers Union v. Corey*, 730 F.3d 1070, 1106 (9th Cir. 2013) (noting the LCFS is a market-based program).

¹⁴² See, e.g., Ex. 66, CARB, LCFS BASICS (2019), <https://perma.cc/5LN8-TS6D> (last visited Feb. 20, 2024).

¹⁴³ See Ex. 67, LCFS Reporting Tool and Credit Bank & Transfer System (LRT-CBTS), CARB, <https://perma.cc/T4KF-33L6> (last visited Feb. 20, 2024).

The LCFS is a market-based approach designed to reduce the carbon intensity of transportation fuels by 10 percent by 2020, from a 2010 baseline. It is important to note that the Cap-and-Trade Program and the LCFS program have complementary, but not identical programmatic goals: Cap-and-Trade is designed to reduce greenhouse gasses from multiple sources by setting a firm limit on GHGs; the LCFS is designed to reduce the carbon intensity of transportation fuels. As a market-based, fuel-neutral program, the LCFS provides regulated parties with flexibility to achieve the most cost-effective approach for reducing transportation fuels' carbon intensity. . . .

CARB staff disagrees that the LCFS is fundamentally a command-and-control system. The LCFS is a fuel-neutral, market-based program that does not give preference to specific transportation fuels and instead bases compliance on a system of credits and deficits based on each fuel's carbon intensity. Carbon intensity (CI) is a measure of the GHG emissions associated with the various production, distribution, and consumption steps in the "life cycle" of a transportation fuel. It is difficult to respond with depth to this assertion because the commenter provides no specifics to support the claim that the LCFS is not market-based. Notably, the commenter does not describe what components of the program could be considered command-and-control.¹⁴⁴

Additionally, CARB's descriptions of the LCFS program closely parallel the statute's definition of "market-based compliance mechanism." The definition states that a market-based compliance mechanism means either of the following:

- (1) A system of market-based declining annual aggregate emissions limitations for sources or categories of sources that emit greenhouse gases.
- (2) Greenhouse gas emissions exchanges, banking, credits, and other transactions, governed by rules and protocols established by the state board, that result in the same greenhouse gas emission reduction, over the same time period, as direct compliance with a greenhouse gas emission limit or emission reduction measure adopted by the state board pursuant to this division.¹⁴⁵

¹⁴⁴ Ex. 68, CARB, FINAL STATEMENT OF REASONS FOR RULEMAKING, INCLUDING SUMMARY OF COMMENTS AND AGENCY RESPONSE 679–81 (2015), <https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2015/lcfs2015/fsorlcfs.pdf>; *see also* Ex. 69, CARB, RESPONSES TO COMMENTS ON THE DRAFT ENVIRONMENTAL ANALYSIS FOR THE AMENDMENTS TO THE LOW CARBON FUEL STANDARD AND ALTERNATIVE DIESEL FUEL REGULATIONS B4-42 (2018), <https://perma.cc/U6H6-6LBU> (CARB responding, "Because the LCFS is a market-based mechanism..."); Ex. 70, CARB, STAFF DISCUSSION PAPER: RENEWABLE NATURAL GAS FROM DAIRY AND LIVESTOCK MANURE 6 (Apr. 13, 2017), <https://perma.cc/ACG4-XTSP> (CARB staff noting in 2017 discussion paper that additionality requirements for the LCFS *are* intended to be identical to those of the compliance offset protocol, to "ensure any crediting is for GHG reductions resulting from actions not required by law or beyond business as usual").

¹⁴⁵ CAL. HEALTH & SAFETY CODE § 38505(k).

CARB explains that the LCFS has a “market for credit transactions,” where “entities with credits to sell can opt to pledge credits into the market and entities needing credits must purchase their pro-rata share of these pledged credits.”¹⁴⁶ CARB explains that credits are generated relative “to a declining CI benchmark for each year.”¹⁴⁷ The LCFS exhibits many if not most of the features of a market-based compliance mechanism, including a Cap-and-Trade allowance-like system with yearly declinations,¹⁴⁸ transaction rules,¹⁴⁹ recordkeeping and auditing requirements,¹⁵⁰ an account system to manage credit transfers—the LCFS Reporting Tool and Credit Bank & Transfer System (LRT-CBTS)¹⁵¹—and a portal that applicants must use to demonstrate compliance,¹⁵² among others. In addition to CARB’s interpretation, designation, and treatment of the program as a market-based mechanism and the overall structure of the regulation evincing the same, the designation of California’s LCFS as a market-based mechanism is ubiquitous in academic and technical literature.¹⁵³

Moreover, the self-evident nature of the LCFS as a market-based compliance mechanism gives rise to the primary objective for these proposed amendments. CARB seeks to correct an oversupply of credits in the market which the 2018 LCFS amendments caused when CARB adopted its avoided methane crediting policy and failed to limit crop-based biofuels. Both of these policy choices caused market failure, with an oversupply of credits from manure-based and crop-based fuels that cratered credit prices.¹⁵⁴ CARB now proposes to increase the carbon intensity benchmark from 20 percent in 2030 to 30 percent in 2030, as well as a significant increase in the carbon intensity benchmark in 2025, to drastically increase the demand for credits and thus increase credit prices. CARB projects these changes to its control of, and regulation over, the market will yield 558 MMTCO_{2e} of cumulative emissions reductions between 2025 and 2045.

As a market-based compliance mechanism that plainly meets both prongs of the statutory definition, CARB has no authority to ignore the mandates in Health & Safety Code § 38562(d)(1) and (d)(2). Rather, the LCFS must ensure that the greenhouse gas emissions reductions CARB

¹⁴⁶ LCFS BASICS, *see supra* note 142.

¹⁴⁷ Ex. 71, *Low Carbon Fuel Standard: About*, CARB, <https://perma.cc/7CR3-MC5M> (last visited Feb. 20, 2024).

¹⁴⁸ *See* CAL. CODE REGS. TIT. 17 §§ 95482–95486.

¹⁴⁹ *See* CAL. CODE REGS. TIT. 17 § 95491.

¹⁵⁰ *See* CAL. CODE REGS. TIT. 17 § 95491.1.

¹⁵¹ CAL. CODE REGS. TIT. 17 § 95483.2(b) (“The LRT-CBTS is designed to support fuel transaction reporting, compliance demonstration, credit generation, banking, and transfers.”).

¹⁵² *See* Ex. 72, CARB, *LOW CARBON FUEL STANDARD – ANNUAL REPORTING AND VERIFICATION USER GUIDE 3–4* (Aug. 9, 2021), https://ww2.arb.ca.gov/sites/default/files/classic/fuels/lcfs/guidance/Reporting_and_Verification_User_Guide.pdf.

¹⁵³ *See, e.g.*, Ex. 73, CTR. FOR CLIMATE AND ENERGY SOLUTIONS, *POLICY CONSIDERATIONS FOR EMERGING CARBON PROGRAMS 2* (June 2016), <https://perma.cc/62AJ-QNF4> (describing Low Carbon Fuel Standards as an example of a market-based policy option, specifically of a baseline-and-credit program); Ex. 74, *Regional Activities*, NAT’L LOW CARBON FUEL STANDARD PROJECT, <https://perma.cc/H8KA-WAYR> (stating California’s “LCFS is a market-based mechanism”) (last visited Feb. 20, 2024).

¹⁵⁴ Ex. 75, Silvia Secchi, *Comments on the Amendments to Low Carbon Fuel Standard*; Ex. 76, Aaron Smith, *Cow Poop Is Now a Big Part of California Fuel Policy, Are the State’s New Low-Carbon Fuel Regulations Full of BS?*, U.C. DAVIS DEPT. AGRIC. RES. ECON. (Jan. 22, 2024), <https://perma.cc/3LXQ-HVD4>; Ex. 77, Jeremy Martin, *Everything You Wanted to Know About Biodiesel and Renewable Diesel. Charts and Graphs Included*, UNION OF CONCERNED SCIENTISTS, *THE EQUATION* (Jan. 10, 2024), <https://perma.cc/C9YC-LK2V>.

claims through 2030 are real, permanent, quantifiable, verifiable, enforceable, and additional.¹⁵⁵ No provision of the proposed amendments complies with this mandate and CARB thus unlawfully and arbitrarily proposes to adopt the LCFS amendments without ensuring the validity of claimed emissions reductions.

2. *The LCFS is not an early action measure as CARB asserted when it denied the Petition for Reconsideration.*

CARB has claimed that it may implement the LCFS as an early action measure not subject to additionality for as long as and for whatever purposes staff wish.¹⁵⁶ However, the Legislature did not enact an open-ended early action measure provision to authorize subsequent rules and regulations for emissions reductions beyond the 2020 statewide greenhouse gas emissions limit. The plain language of the early action measure provision and its place within the broader statutory scheme demonstrates that early action measures served the narrow function of implementing certain measures before CARB adopted the primary measures authorized by section 38562 of the Health & Safety Code to achieve the 2020 statewide greenhouse gas limit.¹⁵⁷ Nor did the Legislature amend section 38560.5 of the Health & Safety Code at any point after its initial adoption to expand the limited role early action measures played in the statutory scheme. In sum, early action measures were designed to be just that - measures that could be implemented prior to implementation of those measures authorized by section 38562 and measures that could help reach the statewide greenhouse gas emissions limit by 2020. CARB thus lacks statutory authority to proceed with these proposed Amendments as an early action measure. Accordingly, the LCFS today is only authorized by section 38562 and therefore CARB must ensure the additionality of emissions reductions before certifying credit generation.

3. *CARB has unlawfully and arbitrarily failed to ensure the greenhouse gas emissions reductions achieved by certified pathways for fuels derived from livestock manure are additional.*

CARB adopted the 2018 LCFS amendments in violation of Health & Safety Code § 38562(d)(2) because it failed in those amendments to ensure that LCFS emissions reductions would be additional. Further, CARB has approved dozens of fuel pathways for fuels derived from dairy and swine manure despite comments on the lack of additionality for those fuel pathways.¹⁵⁸ The Commenters specifically identified how those pathways lack additionality because the emissions reductions are required by the DDRDP program, are required by the Aliso Canyon Mitigation Agreement, and are thus required by law and/or otherwise would have occurred regardless of the LCFS. Despite those comments, CARB has certified those pathways and allowed those biofuel producers to generate LCFS credits which deficit holders may utilize to sell polluting

¹⁵⁵ See Health & Safety Code §§ 38562(d)(1), (d)(2); 38570(a). CARB lacks authority to adopt these LCFS amendments insofar as the amendments would reduce emissions to meet the Assembly Bill 1279 target in 2045. See *infra* section IV(D).

¹⁵⁶ See CARB, RESPONSE TO PETITION FOR RECONSIDERATION OF THE DENIAL OF THE PETITION FOR RULEMAKING TO EXCLUDE ALL FUELS DERIVED FROM BIOMETHANE FROM DAIRY AND SWINE MANURE FROM THE LOW CARBON FUEL STANDARD PROGRAM, *supra* note 87, at 2, n.4.

¹⁵⁷ See Health & Safety Code §§ 38560.5(a), (c); 38562.

¹⁵⁸ *Supra* section III (citing and incorporating by reference all comments).

fossil fuels. These unlawful pathway certifications represent exactly the type of double-counting abuse (indeed triple-counting abuse for pathways related to the DDRDP and the Aliso Canyon Mitigation Agreement) the Legislature specifically prohibited. CARB should correct these fuel pathways pursuant to its authority under the existing LCFS regulations¹⁵⁹ and proceed as the Legislature has commanded.

C. CARB unlawfully and arbitrarily proposes to use the LCFS Amendments to achieve the Senate Bill 1383 methane reduction mandate.

In 2016, the Legislature passed Senate Bill 1383 and required CARB to adopt regulations to reduce methane emissions from manure management by 40 percent from 2013 levels by 2030.¹⁶⁰ The Legislature also directed CARB to prioritize direct emissions reductions.¹⁶¹ But the proposed LCFS amendments ignore these mandatory duties. Instead, CARB arbitrarily and capriciously proposes these amendments as the policy mechanism to achieve the legislatively required methane reductions. CARB relies on alleged methane reductions achieved by current and anticipated anaerobic digester projects receiving LCFS credits. But CARB's preferred policy ignores its duty to adopt regulations and its duty to prioritize direct emissions reductions.

CARB also fails to reconcile the claimed progress towards the Senate Bill 1383 reductions with the facts that (1) the LCFS considers digester projects as achieving methane reductions; (2) rewards those projects with LCFS credits representing those methane reductions; (3) authorizes deficit holders – oil companies – to buy those credits to offset the carbon intensity of their fossil fuels; and (4) the methane reductions from digesters offset fossil fuel emissions. With the LCFS transferring the alleged methane reductions from anaerobic digester-related fuel pathways to authorize more climate pollution from fossil fuels in the LCFS, CARB arbitrarily and capriciously proposes to credit the same methane reductions toward the Senate Bill 1383-required methane reductions. CARB cannot have it both ways and cannot explain how the same digesters generate credits that allow more emissions from fossil fuels yet also somehow reduce the climate pollution the Legislature required. As a result, CARB violates its legislatively imposed duties to limit methane pollution and arbitrarily and capriciously claims the LCFS pollution trading scheme reduces methane pollution.

1. CARB has a mandatory duty to adopt regulations to achieve the Senate Bill 1383 methane reduction mandate.

As CARB has acknowledged, the dairy and livestock sector produces more than half of California's methane emissions.¹⁶² Senate Bill 1383 mandates that CARB “*shall adopt regulations* to reduce methane emissions from livestock manure management operations and dairy manure

¹⁵⁹ Cal. Code Regs. Tit. 17, § 95495.

¹⁶⁰ Cal. Health & Safety Code § 39730.7(b)(1).

¹⁶¹ Cal. Health & Safety Code § 38562.5(a) & (b).

¹⁶² Ex. 78, CARB, SHORT-LIVED CLIMATE POLLUTANT REDUCTION STRATEGY 63 (Mar. 2017), <https://perma.cc/FL5E-SWBX> (“California’s dairy and livestock industries account for more than half of the State’s total methane emissions[.]”).

management operations” to meet the 2030 target.¹⁶³ As CARB has further acknowledged, Senate Bill 1383 “sets a methane emissions reductions target . . . of 40 percent below 2013 levels, or . . . 9 million metric tons carbon dioxide equivalent (MMTCO₂e) by 2030.”¹⁶⁴

As required by Senate Bill 1383, CARB prepared a progress report. But the report concedes that, even with assumed statewide dairy herd size decreases, the dairy and livestock sector would achieve “only about half of the emissions reductions needed to achieve the 2030 target.”¹⁶⁵ But despite the legal duty to promulgate regulations, CARB’s Executive Officer recently disavowed any intention of initiating such rulemaking in 2024.¹⁶⁶ And CARB takes several years to adopt major regulations.¹⁶⁷ Instead of adopting regulations and complying with Health & Safety Code section 39730.7(b)(1), CARB proposes to rely on the LCFS instead.¹⁶⁸

CARB has no authority to ignore the Legislature and choose its own preferred policy for securing methane reductions. Thus, CARB must honor its duty to adopt regulations and immediately initiate rulemaking on an expedited basis.

2. *CARB has a mandatory duty to prioritize direct emissions reductions.*

The Legislature has further commanded CARB to favor direct emissions reductions over pollution trading schemes like the LCFS. Assembly Bill 197 imposes a duty on CARB to prioritize direct emissions reductions when adopting regulations like those mandated by Senate Bill 1383. Specifically, CARB “shall . . . prioritize . . . [e]mission reduction rules and regulations that result in direct emission reductions[.]”¹⁶⁹ In other words, CARB has a mandatory duty to prioritize “greenhouse gas emission reduction action[s] made by a greenhouse gas emission source at that source”¹⁷⁰ over voluntary, market-based pollution trading schemes.¹⁷¹

¹⁶³ Cal. Health & Safety Code § 39730.7(b)(1) (emphasis added); see SHORT-LIVED CLIMATE POLLUTANT REDUCTION STRATEGY, *supra* note 162, at 69 (“The regulations *are to be implemented* on or after January 1, 2024.” (emphasis added)).

¹⁶⁴ Ex. 79, CARB, ANALYSIS OF PROGRESS TOWARD ACHIEVING THE 2030 DAIRY AND LIVESTOCK SECTOR METHANE EMISSIONS TARGET ES-1 (Mar. 2022), <https://perma.cc/U494-SVV3>; see *supra* notes 74 & 88 and associated text.

¹⁶⁵ RESPONSE TO PETITION FOR RECONSIDERATION OF THE DENIAL OF THE PETITION FOR RULEMAKING TO EXCLUDE ALL FUELS DERIVED FROM BIOMETHANE FROM DAIRY AND SWINE MANURE FROM THE LOW CARBON FUEL STANDARD PROGRAM, *supra* note 87, at 3; see ANALYSIS OF PROGRESS TOWARD ACHIEVING THE 2030 DAIRY AND LIVESTOCK SECTOR METHANE EMISSIONS TARGET, *supra* note 164, at ES-2 (“the dairy and livestock sector is projected to achieve just over half of the annual methane emissions reductions necessary to achieve the target by 2030”).

¹⁶⁶ Transcript of Videoconference Meeting, *supra* note 105, at 81.

¹⁶⁷ See Ex. 80, Decl. of Sylvia Vanderspeck in Support of Defendants’ Opposition to Plaintiffs’ Motion for Summary Judgment ¶¶ 21-22, *Central California Environmental Justice Network v. Randolph*, No. 2:22-cv-01714-DJC-CKD (E.D. Cal.) (Dkt. No. 21-1).

¹⁶⁸ ISOR, *supra* note 42, at 8; see also *id.* at 30 (“The LCFS supports CARB’s work to meet Short Lived Climate Pollutant (SLCP) targets set by Senate Bill 1383 (Lara, Chapter 395, Statutes of 2016) by incentivizing dairies to capture and convert methane-rich biogas into transportation fuels (compressed natural gas, hydrogen, and electricity).”).

¹⁶⁹ Cal. Health & Safety Code § 38562.5(a) & (b).

¹⁷⁰ *Id.* Health & Safety Code § 38505(e).

¹⁷¹ See e.g., Ex. 81, Alice Kaswan, *California Climate Policies Serving Climate Justice* 14, NAT. RESOURCES & ENV’T (2019).

This legislative mandate further underscores CARB’s unequivocal duty in Senate Bill 1383 to adopt regulations to limit methane from manure management with a priority for direct emissions reductions. CARB acknowledged the difference between direct emissions reductions and market-based mechanisms, and that the LCFS does not substitute for rules and regulations that result in direct emissions reductions, when it contrasted “Regulations to Ensure Emission Reductions” with “Incentives and Market Development” in its Short-Lived Climate Pollutant Reduction Strategy.¹⁷² For example, under “Incentives and Market Development,” CARB discusses “help[ing] the industry reduce emissions before regulatory requirements take effect.”¹⁷³ In this section CARB also discusses “environmental credits from dairy-related transportation fuel projects,” “credits under the LCFS, increasing the market value of manure products,” “installing anaerobic digesters at dairies,” and “[e]nabling pipeline injection of biomethane and minimizing associated costs” to “help direct dairy biogas into the transportation sector and allow for the generation of LCFS and RIN credits, which [can] provide an especially valuable revenue stream.”¹⁷⁴

Accordingly, CARB should initiate a rulemaking pursuant to Senate Bill 1383 and prioritize direct emissions reductions rather than continuing to undermine those mandates through LCFS subsidies.

3. *CARB arbitrarily and capriciously finds that the LCFS Amendments provide methane reductions from manure management that could or would satisfy the Senate Bill 1383 methane reduction mandate.*

CARB claims that the proposed LCFS amendments will achieve 558 MMTCO_{2e} in cumulative greenhouse gas emissions reductions by 2045.¹⁷⁵ At the same time, CARB concludes that the LCFS provides the methane reductions required by Senate Bill 1383. “SB 1383 (Lara, Chapter 395, Statutes of 2016) requires a 40% reduction in California’s methane emissions by 2030 and the LCFS facilitates significant private investment in technologies that provide the methane reductions from dairy, livestock manure, organic waste, and landfill management operations called for by SB 1383.”¹⁷⁶ CARB also finds that the LCFS achieves these reductions by providing incentives to dairies to reduce methane. “The LCFS supports CARB’s work to meet Short Lived Climate Pollutant (SLCP) targets set by Senate Bill 1383 (Lara, Chapter 395, Statutes of 2016) by incentivizing dairies to capture and convert methane-rich biogas into transportation fuels (compressed natural gas, hydrogen, and electricity).”¹⁷⁷

But CARB does not explain how methane reductions count towards the Senate Bill 1383 obligation when the incentives for private investment in digesters—LCFS credits awarded for compressed natural gas, hydrogen, and electricity fuels—serve a direct function as offsets in the LCFS pollution trading scheme. The LCFS allows producers of fossil transportation fuels with high greenhouse gas emissions to offset their fuels’ impact on the climate by purchasing credits

¹⁷² SHORT-LIVED CLIMATE POLLUTANT REDUCTION STRATEGY, *supra* note 162, at 67, 69.

¹⁷³ *Id.* at 67.

¹⁷⁴ *Id.* at 68.

¹⁷⁵ ISOR, *supra* note 42, at 5.

¹⁷⁶ *Id.* at 8.

¹⁷⁷ *Id.* at 30.

derived from fuels such as manure-based natural gas, hydrogen, and electricity.¹⁷⁸ A given fuel's carbon intensity represents the greenhouse gas emissions of a given fuel divided by its energy content.¹⁷⁹ As explained herein, CARB awards manure-based fuels negative carbon intensities based on the avoided methane crediting policy. Those credits representing methane emission reductions are then purchased by fossil fuel producers to comply with the carbon intensity benchmark, thereby assigning those claimed reductions to their own fossil fuel operations. CARB thus arbitrarily and capriciously claims the LCFS provides methane reductions to comply with Senate Bill 1383 when those reductions are used by oil companies to demonstrate their own compliance with the LCFS.

D. CARB unlawfully and arbitrarily proposes LCFS Amendments to implement the 2022 Scoping Plan to achieve post-2030 policies and the 2045 target set by Assembly Bill 1279.

CARB's proposed LCFS amendments exceed its statutory authority when it proposes post-2030 carbon intensity benchmarks and unilaterally decides to use the LCFS to build-out biomethane and hydrogen infrastructure for use as stationary source fuels. The Legislature has not authorized such rulemaking authority or otherwise directed CARB to use the LCFS as the mechanism for developing hydrogen infrastructure. Because CARB does not operate with unbounded rulemaking authority, CARB may not proceed as proposed and should instead seek appropriate authority from the Legislature.

1. CARB proposes to amend the LCFS to achieve greenhouse gas emissions reductions above and beyond achieving the 2030 targets required by Senate Bill 32 and Senate Bill 1383.

In 2018, CARB amended the LCFS to align the regulation with the 2030 target set by Senate Bill 32 (2016, Pavley).¹⁸⁰ Those amendments increased the carbon intensity from a 10 percent benchmark by 2020 to a 20 percent benchmark by 2030.

The ISOR describes the objectives of the proposed 2024 amendments.¹⁸¹ Among those objectives, CARB proposes to amend the LCFS to achieve long-term greenhouse gas emissions reductions above and beyond the 2030 Senate Bill 32 emissions reductions target, including:

Improve California's *long-term* ability to support the production and use of increasingly lower-CI transportation fuels and to improve the program's overall effectiveness.

Update the annual carbon intensity benchmarks through 2030 and *establish more stringent post-2030 benchmarks* in alignment with the 2022 Scoping Plan Update.

¹⁷⁸ *Id.* at 10–12.

¹⁷⁹ *Id.* at 11.

¹⁸⁰ *Id.* at 22; Health & Safety Code § 38566.

¹⁸¹ ISOR, *supra* note 42, at 22–37.

Incentivize fuel production and refueling infrastructure buildout needed to meet California’s *long-term* climate goals and reduce dependence on petroleum fuels, including opportunities to leverage federal funding for low-carbon hydrogen production and ZEV fueling, and *support the transition of biomethane fuel pathways for combustion out of transportation.*¹⁸²

CARB proposes to increase the carbon intensity benchmark to align with the 2022 Scoping Plan, which CARB adopted within the authority conferred by Assembly Bill 1279 (2022, Muratsuchi).¹⁸³ CARB describes the carbon intensity benchmark amendments as the “most significant change in this proposal” to support “California’s goal for achieving carbon neutrality by 2045 and achieving an 85% reduction in GHG emissions by 2045, as called for by AB 1279 and the 2022 Scoping Plan Update.”¹⁸⁴ And CARB acknowledges that adjusting the benchmarks are necessary to correct market failures, or in other words, too many biomethane and biofuel credits flooded the market and depressed credit prices.

CARB explains the over supply problem. Renewable diesel “has grown substantially and far exceeds what was previously modeled in 2018 when the current CI benchmarks were established.”¹⁸⁵ Electricity and hydrogen fuels “have increased over 50% between 2019 and 2022 and are far outpacing the projections staff used to establish the existing CI benchmarks during the previous 2018 rulemaking.”¹⁸⁶ “Biomethane supplies have also increased as more methane capture projects are developed.”¹⁸⁷ “Taken together, these trends suggest that the market is outpacing previous fuels and crediting projections used for the 2018 LCFS benchmark modeling and that re-evaluation of near-term targets is needed to accelerate action and plan beyond 2030.”¹⁸⁸ To correct the market depressed by low credit prices, CARB proposes to accelerate the 20% benchmark from 2030 to 2025 (the “step-down”) and set a 30 percent benchmark by 2030.¹⁸⁹ CARB further proposes a linear increase in the benchmarks between 2031 and 2045 to reach a 90 percent benchmark in 2045.¹⁹⁰ “Scenarios modeled both in-house by CARB and by external stakeholders indicate that a reduction of at least 30% by 2030 and 90% by 2045 is achievable and necessary to accelerate decarbonization of the transportation fuels sector and support the State’s broader climate goals.”¹⁹¹

CARB also describes the objectives of the proposed amendments as necessary to reduce methane and to use the LCFS pollution trading scheme **to develop fuels for stationary sources.**

¹⁸² *Id.* at 22 (emphasis added).

¹⁸³ *Id.* at 22.

¹⁸⁴ *Id.* at 17.

¹⁸⁵ *Id.*

¹⁸⁶ *Id.* at 22–23.

¹⁸⁷ *Id.* at 23.

¹⁸⁸ *Id.*

¹⁸⁹ *Id.*; see CARB, APPENDIX A-1, PROPOSED REGULATION ORDER, PROPOSED AMENDMENTS TO THE LOW CARBON FUEL STANDARD REGULATION REDLINE AMENDMENTS 64–65, <https://perma.cc/ZQ7Z-25UN> (§ 95484 Table 1).

¹⁹⁰ ISOR, *supra* note 42, at 25 (Figure 6); APPENDIX A-1, PROPOSED REGULATION ORDER, PROPOSED AMENDMENTS TO THE LOW CARBON FUEL STANDARD REGULATION REDLINE AMENDMENTS, *supra* note 189, at 64–65.

¹⁹¹ ISOR, *supra* note 42, at 24.

“Capturing methane from California’s methane sources (e.g., landfills, dairies, and wastewater) is critical for achieving California’s climate targets, including the targets identified by SB 32, SB 1383, and AB 1279.”¹⁹² CARB acknowledges, as it must, that biomethane-based fuels have no future in California’s transportation fuels market. But CARB further proposes – without any authority from the Legislature – to adopt regulations that turn the LCFS into the policy mechanism to build out fuel supplies and fuel infrastructure, especially for hydrogen fuel ultimately for use in stationary sources.

The 2022 Scoping Plan Update reinforces the message that while there is clearly a role for biomethane in decarbonizing California’s energy use in the long term (particularly as a feedstock for renewable hydrogen production), biomethane used as an end-use vehicle fuel will decline as ZEVs penetrate the market, and this resource should be transitioned to other sectors. Biomethane can play a key role in decarbonizing stationary sources or other energy applications, and the 2022 Scoping Plan Update identifies additional end uses in the industrial, commercial, and residential sectors; production of hydrogen; and electricity generation by displacing the need for fossil gas. For the fuel to transition to other sectors in the long term, the existing market signals will need to transition accordingly to avoid stranded assets and the closure of methane capture projects. With this background, staff is proposing changes for pathways related to biomethane as a transportation fuel under the LCFS program. These changes would continue to incentivize the methane reductions needed in the next decade, while aligning with the 2022 Scoping Plan Update to shift biomethane to the production of renewable hydrogen or for use in other sectors by 2045.¹⁹³

The facts CARB acknowledge include the minor role manure-based fuels play among California’s transportation fuels and the major contribution those fuels make as credit-generating fuels. CARB’s lavish avoided methane crediting policy means that credits derived from biomethane fuels comprise approximately 16 percent of total credits.¹⁹⁴ Revenue from credits vary significantly among different fuels, yet dairy biomethane receives by far the largest windfall between 2025 and 2045 compared to all other fuels.¹⁹⁵

Despite the acknowledged lack of market demand for biomethane fuels, CARB nevertheless proposes to inject steroids in avoided methane crediting. CARB proposes to retain avoided methane crediting – regardless of the EJAC recommendations to terminate the policy – and convey a strong market signal for biogas companies to get their pathways certified or break ground on their digesters before the end of this decade. If they do, they can receive up to **30 years**

¹⁹² *Id.* at 30.

¹⁹³ *Id.* at 30.

¹⁹⁴ *Id.* at 16. The ISOR lacks clarity in whether electric fuel pathways derived from combusting biogas at dairy and swine operations qualify as biomethane or electricity credit-generating pathways as categorized in the ISOR at page 16. CARB should clarify how it classifies such fuels.

¹⁹⁵ *Id.* at 79, Tbl. 15.

of avoided methane credits. “For projects that break ground after December 31, 2029, staff is proposing to phase out pathways for crediting biomethane used in CNG vehicles after December 31, 2040. Pathways for biomethane used to produce renewable hydrogen would be eligible to receive credits until December 31, 2045.”¹⁹⁶ Fuel pathways that produce electric vehicle fuel using biogas combusted on-site at dairy and swine operations could conceivably enjoy the benefits of avoided methane crediting in perpetuity under the plain language of the Amendments.

2. CARB lacks statutory authority to adopt these proposed Amendments to the LCFS.

CARB only has the authority to promulgate regulations that the Legislature has granted. CARB does not operate with *carte blanche* regulatory authority. And the Legislature has not given CARB the power to adopt these proposed amendments to the LCFS.

In 2006, the Legislature authorized CARB to adopt early action measures, greenhouse gas emissions limits, and emissions reduction measures when it passed Assembly Bill 32.¹⁹⁷ This rulemaking authority extended only to achieving the statewide greenhouse gas emissions limit (1990 greenhouse gas emission levels) by 2020.¹⁹⁸ In 2016, the Legislature passed several, interrelated pieces of climate legislation including Senate Bill 32 and Senate Bill 1383. These bills modified and limited CARB’s rulemaking authority.

The Legislature authorized CARB to adopt rules and regulations to achieve the 2030 targets set by Senate Bill 32 and Senate Bill 1383. Specifically, the Legislature gave CARB the authority to adopt “rules and regulations to achieve the maximum technologically feasible and cost-effective greenhouse gas emissions reductions authorized by this division” and mandated that CARB “ensure that statewide greenhouse gas emission are reduced to at least 40 percent below the below the statewide greenhouse gas emissions limit.”¹⁹⁹ The Legislature also specifically directed CARB to adopt regulations to reduce methane from manure management. “The state board, in consultation with the department, shall adopt regulations to reduce methane emissions from livestock manure management operations and dairy manure management operations, consistent with this section and the strategy, by up to 40 percent below the dairy sector’s and livestock sector’s 2013 levels by 2030.”²⁰⁰

The Legislature has not authorized CARB to adopt rules or regulations to achieve reductions in greenhouse gas emissions to achieve the 2045 policy goals of Assembly Bill 1279. Unlike the framework of the earlier climate legislation, the Legislature directed CARB to prepare a Scoping Plan Update to *recommend* policies for achieving carbon neutrality and an 85 percent

¹⁹⁶ *Id.* at 30.

¹⁹⁷ See Health & Safety Code § 38560.5; AB 32, 2006 Cal. Legis. Serv. Ch. 488 (former section 38562).

¹⁹⁸ Health & Safety Code § 38560.5; AB 32, 2006 Cal. Legis. Serv. Ch. 488 (former section 38562).

¹⁹⁹ Health & Safety Code § 38566; SB 32, 2016 Cal. Legis. Serv. Ch. 249.

²⁰⁰ Health & Safety Code § 39730.7(b)(1). CARB’s Executive Officer has already unequivocally stated that CARB has not initiated, and has no plans to initiate, the rulemaking the Legislature mandated. Transcript of Videoconference Meeting, *supra* note 105, at 81.

reduction in greenhouse gas emissions by 2045.²⁰¹ Unlike Senate Bill 32, the Legislature *did not* give CARB rulemaking authority to adopt rules and regulations to achieve the AB 1279 goals.²⁰²

Other legislation recently adopted by the Legislature provide further indicia of CARB’s limited rulemaking authority. Most significantly, the Legislature passed Senate Bill 596 and Senate Bill 1075 to provide policy direction on the cement and hydrogen sectors, respectively.²⁰³ Senate Bill 596 directs CARB to prepare a comprehensive strategy for the cement sector by July 1, 2023, one of the hard to decarbonize stationary source sectors which the 2022 Scoping Plan Update identifies. The Legislature authorizes CARB to implement that cement strategy only “upon appropriation by the Legislature.”²⁰⁴ In Senate Bill 1075, the Legislature directed CARB to prepare an evaluation of hydrogen, including green hydrogen, by June 1, 2024, that shall include policy recommendations, a description of potential strategies supporting hydrogen infrastructure, and an analysis of hydrogen use as a climate strategy.²⁰⁵ Senate Bill 1075 did not authorize CARB to adopt rules or regulations to implement the hydrogen strategy.

As a result, CARB does not have the rulemaking authority to adopt the proposed LCFS amendments. CARB lacks authority under Health & Safety Code § 38560.5 – the Assembly Bill 32 early action measure provision – to proceed with a rulemaking to achieve post-2020 emissions reductions. CARB rulemaking authority to achieve the 2030 targets established by Senate Bill 32 and Senate Bill 1383 authorize and cabin CARB’s rulemaking authority related those 2030 targets. Critically, the Legislature has not authorized CARB to adopt rules or regulations to implement the LCFS after 2030, including establishing carbon intensity benchmarks through to 2045. Where the Legislature has established climate policy for the post-2030 period, it has directed CARB to make *recommendations* and to date has not authorized CARB to adopt rules or regulations to implement those recommendations. CARB does not enjoy carte blanche rulemaking authority to achieve its stated objectives, and these proposed amendments are thus *ultra vires*.

E. The proposed Amendments will violate state and federal civil rights and fair housing laws.

1. The proposed Amendments will result in a disparate impact on protected classes in violation of Title VI and 11135.

State law provides that “[n]o person...shall, on the basis of...race, color, ...ancestry, national origin, ethnic group identification” or other protected classes “be unlawfully denied full and equal access to the benefits of, or be unlawfully subjected to discrimination under, any program or activity that is conducted, operated, or administered by the state or by any state agency....”²⁰⁶

²⁰¹ Health & Safety Code § 38562.2(d)(1); AB 1279, 2022 Cal. Legis. Serv. Ch. 250.

²⁰² Health & Safety Code § 38562.2(d)(1); AB 1279, 2022 Cal. Legis. Serv. Ch. 250.

²⁰³ See SB 596, 2021 Cal. Legis. Serv. Ch. 246; SB 1075, 2022 Cal. Legis. Serv. Ch. 250.

²⁰⁴ Health & Safety Code § 38561.2(c).

²⁰⁵ Health & Safety Code § 38561.8(b).

²⁰⁶ Cal. Gov. Code § 11135; *see also* Cal. Gov. Code § 65008 (Any discriminatory action taken “pursuant to this title by any city, county, city and county, or other local governmental agency in this state is null and void if it denies to any individual or group of individuals the enjoyment of residence, land ownership, tenancy, or any other land use in this state...”); Cal. Gov. Code §§ 12955, subd. (l) (unlawful to discriminate through public or private land use practices, decisions, or authorizations).

Further, Section 601 to Title VI of the Civil Rights Act provides that no person shall, “on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity.”²⁰⁷

It is important to note that “... a disparate impact claim can be established without proving discriminatory intent.”²⁰⁸ However, “just as ‘[e]vidence of discriminatory intent can bolster a disparate impact case,’ allegations of discriminatory intent can bolster allegations that a disparate impact was caused by the challenged practice.”²⁰⁹

Here, for the reasons discussed above, and in this section, CARB’s proposal to continue incentivizing the capture of dairy methane and production of factory farm gas will cause a disparate impact on Latino/a/e communities in the San Joaquin Valley based on race, national origin, and ethnic group identification.

Specifically, as discussed more fully below, the proposed amendments exacerbate and entrench disproportionate impacts on Latino/a/e people and communities due to their role in supporting the development of more methane digesters and encouraging herd expansions and consolidation. These two complementary phenomena—the expansion and concentration of dairy herds and the installation and operation of digesters—disproportionately impact people and communities living near those facilities and the San Joaquin Valley, where the vast majority of large-scale dairies, expanding dairies, and digesters are located.

a) Concentration of dairy herds and manure causes disparate impacts on Latino/a/e communities.

Large dairies are disproportionately located in Latino/a/e regions and near Latino/a/e communities.²¹⁰ The vast majority of state-funded dairy digesters and dairies with LCFS pathways are also disproportionately located in the San Joaquin Valley,²¹¹ a disproportionately Latino/a/e/region.²¹² The LCFS and the proposed Amendments will encourage further concentration of dairy herds, dairy cows, and wet manure in the San Joaquin Valley.²¹³ In doing so, it will disproportionately impact Latino/a/e communities and people. Specifically, Latino/a/e communities and people will disproportionately suffer (a) increased discharge of nitrate to

²⁰⁷ 42 U.S.C. § 2000d.

²⁰⁸ *Martinez v. City of Clovis*, 90 Cal. App. 5th 193, 255 (Cal. Ct. App. 2023).

²⁰⁹ *Id.* at 261.

²¹⁰ See *supra* section II.B (discussion of how dairies with LCFS pathways and digester projects are located in a disproportionately Latino/a/e region).

²¹¹ See *supra* section II.A (discussion of manure management and California’s dairy herd). Approximately 86% of LCFS pathways approved for fuel derived from livestock manure in California are located in the San Joaquin Valley while over 99% of digesters funded by the state’s Dairy Digester and Research Development Program are in the San Joaquin Valley. DAIRY DIGESTER RESEARCH AND DEVELOPMENT PROGRAM: PROJECT-LEVEL DATA, *supra* note 8.

²¹² See *supra* section II.A; DAIRY DIGESTER RESEARCH AND DEVELOPMENT PROGRAM: PROJECT-LEVEL DATA, *supra* note 8.

²¹³ See *supra* section II(E) (discussion of the ways in which the LCFS’s treatment of dairy digesters creates an incentive for concentrated herds and liquid manure management).

groundwater within the localized zone of contribution;²¹⁴ (b) decreased groundwater levels within the localized cone of depression;²¹⁵ (c) increased air pollution, including exposure to ammonia, ozone, and pm 2.5;²¹⁶ and (d) increasing and exacerbating impacts to odor and flies.²¹⁷ They will also experience higher rates of the associated health impacts, as stated above.²¹⁸

b) Anaerobic digesters negatively impact disproportionately Latino/a/e communities.

Increased installation and operation of digesters will also worsen local air and water pollution, by increasing nitrate pollution and ammonia emissions.²¹⁹ Additionally, flaring of excess biogas and use of combustion engines to convert biogas into electricity will increase NOx emissions in the San Joaquin Valley.²²⁰ Increased nitrate pollution will contaminate drinking water sources, while increased ammonia and NOx emissions will increase exposure to ammonia along with PM2.5 and ozone pollution. Digesters are almost exclusively installed at large dairies located in disproportionately Latino/a/e regions of the state. Therefore, anaerobic digesters, and incentives to build them, disproportionately impact Latino/a/e communities and people by increasing pollution and the resulting health and quality of life impacts.

²¹⁴ See *supra* section II.C.3 (discussion of nitrate impacts); see also Balazs et al., *supra* note 28; Ex. 82, Anne Weir Schechinger, *In California, Latinos More Likely to Be Drinking Nitrate-Polluted Water*, ENVTL. WORKING GROUP (Oct. 2020), <https://perma.cc/WR6T-SVZP>.

²¹⁵ See *supra* section II.C.4 (discussion of groundwater depletion); see also Louwyck et al., *supra* note 37; Ex. 83, LAURA FEINSTEIN ET AL., DROUGHT AND EQUITY IN CALIFORNIA 21 (Jan. 2019), <https://perma.cc/5TNC-Q9FS> (“Low-income communities and communities of color in the Central Valley rely disproportionately on private wells because adequate public services were not developed in those communities.”); Ex. 84, CHIONE FLEGEL ET AL., CALIFORNIA UNINCORPORATED: MAPPING DISADVANTAGED COMMUNITIES IN THE SAN JOAQUIN VALLEY 29 (2013), <https://www.policylink.org/resources-tools/california-unincorporated-mapping-disadvantaged-communities-in-the-san-joaquin-valley> (“low-income households, people of color, and communities already burdened with environmental pollution suffered the most severe impacts [from drought]”).

²¹⁶ See *supra* sections II.C.1–3 (discussion of ammonia emissions and exposure, fine particulate matter, and ozone); see also Casey et al., *supra* note 9 (“Unadjusted models showed racial/ethnic and SES disparities in the odds of living in close proximity to methane superemitters and intensity of exposure based on multiple industry categories and total methane emissions. In adjusted models, the associations with race/ethnicity persisted.... Further, subanalyses restricted to dairies/manure management facilities and oil and gas production revealed similar racial disparities as the main analysis.”).

²¹⁷ See *supra* section II.C.6 (discussion of odor and flies).

²¹⁸ See *supra* section II.C. According to a study by UC Davis, Madera County already has the highest asthma-related emergency room visit rates for children in the state, with Merced County following close behind. In addition, 11.3% of children in Madera County have been diagnosed with asthma. In Merced County, a staggering 32.5% of children—*nearly one in three*—have been diagnosed with asthma. Ex. 85, U.C. DAVIS, CENTER FOR REGIONAL CHANGE, CALIFORNIA’S SAN JOAQUIN VALLEY: A REGION AND ITS CHILDREN UNDER STRESS (Jan. 2017), <https://perma.cc/TB42-F9MG>.

²¹⁹ See *supra* sections II.C.1 and II.C.4 (discussion of nitrate and ammonia).

²²⁰ See *supra* sections II.C.2 and II.C.5 (discussion of PM 2.5 and ozone).

c) Gas price increases will have a disparate impact on Latino/a/e and Black people and communities.

As stated above, increased gasoline prices that will result directly from the proposed Amendments²²¹ will be borne disproportionately by lower income people, lower income communities,²²² and communities that are disproportionately Latino/a/e and Black.²²³ Additionally, lower income rural communities and other lower income areas that do not have access to reliable transit and are less able to mitigate increased gas prices.

d) Staff's failure to consider the harmful impacts of the LCFS on the San Joaquin Valley constitutes a disparate impact on Latino/a/e communities.

As discussed throughout these comments, CARB staff has consistently failed to consider or address public comments from community residents who live near dairies, including dairies producing factory farm gas and dairies participating in LCFS fuel pathways.²²⁴ These comments have included specific information about how dairies and digesters impact public health and quality of life. CARB staff's failure to consider or address these comments has a disparate impact itself. Additionally, it distorts the administrative record in a manner that has secondary disparate impacts, as articulated throughout these comments.

e) The proposed Amendments and the circumstances surrounding the development and release of the staff proposal indicate intentional discrimination.

Intentional discrimination under Title VI of the Federal Civil Rights Laws can be found when, based on the totality of the circumstances, direct and circumstantial evidence demonstrates that action was taken at least in part because of its adverse impact on a protected class.²²⁵ Similarly, state civil rights law recognizes intentional discrimination. Notably regulations pending final approval indicate that there's a cognizable claim of intentional discrimination if discriminatory or purposeful intent is simply *a* motivating factor (among several motivating factors) in a decision.²²⁶

Courts have considered a non-exhaustive list of factors which can demonstrate intentional discrimination under Federal civil rights law even without explicit statements of that impermissible

²²¹ See *supra* section II.D.

²²² Sarah Bohn & Daniel Payares-Montoya, *supra* note 43 ("The bottom quintile of families by income level spend 16% of their income on gas and fuel compared to 8% for the second-lowest income group or 2% for the highest-income group.").

²²³ Nadia Lopez & Erica Yee, *supra* note 44 ("ZIP codes with the highest rates of electric car ownership tend to be more white and Asian and less Latino and Black than the general population.").

²²⁴ See *supra* section III (discussing Procedural Background).

²²⁵ *Village of Arlington Heights v. Metro. Hous. Dev. Corp.*, 429 U.S. 252, 266–268 (1977); see also Ex. 86, *Title VI Legal Manual*, U.S. DEP'T OF JUSTICE, <https://perma.cc/8CKY-PSED> (last visited Feb. 20, 2024).

²²⁶ Cal. Gov. Code § 11135; see also Ex. 87, Cal. Code Regs. Tit. 14, § 14027 (pending final approval, available at <https://perma.cc/4KB2-MRV3>).

intent.²²⁷ These factors are considered in the totality of circumstances and no single factor is necessary in order to show discriminatory intent.²²⁸ These factors include^{229,230}:

- Statistics demonstrating a clear pattern of discriminatory effect
- The historical background of the decision
- The sequence of events leading up to the decision
- Departures from normal procedures or substantive conclusions
- Foreseeability of the consequences of the state action

(1) Statistics Demonstrating a Clear Pattern of Discriminatory Effect

As discussed throughout these comments, the existing LCFS program results in disproportionate and negative harm on communities of color and people of color, particularly Latino/a/e people and communities. The proposed Amendments will intensify these impacts.

(2) The Historical Background of the Decision

As discussed throughout these comments along with the Petition for Rulemaking, the Petition for Reconsideration, and myriad other written and oral comments,²³¹ the growth and intensification of industrial-style dairy operations in California over the past several decades has occurred almost exclusively in the San Joaquin Valley despite known environmental and human health impacts. Local governments in the San Joaquin Valley facilitated this trend with lax environmental oversight.²³² This concentration of dairy herds and dairy cows took place – and continues to take place – near communities that are disproportionately Latino/a/e and in the San Joaquin Valley which has higher percent Latino/a/e population than the state as a whole.

CARB itself has facilitated growth and intensification of dairy operations through the Low Carbon Fuel Standard which provides preferences for large-scale dairy operations and encourages the production of manure and liquified manure management techniques and by failing to initiate rulemaking to directly regulate livestock methane. Other state agencies have similarly provided incentives for the intensification of dairy operations in the San Joaquin Valley by providing grant funds for the development of digesters and associated factory farm gas infrastructure.

(3) The Sequence of Events Leading Up to the Decision

Commenters and other stakeholders—most importantly people living near dairies—have repeatedly conveyed information to CARB about the environmental and human health harms that

²²⁷ *Arlington Heights*, 429 U.S. at 266–268; see also *Title VI Legal Manual*, *supra* note 225.

²²⁸ *Arlington Heights*, 429 U.S. at 266–268; see also *Title VI Legal Manual*, *supra* note 225.

²²⁹ *Arlington Heights*, 429 U.S. at 266–268; see also *Title VI Legal Manual*, *supra* note 225.

²³⁰ *Columbus Bd. of Educ. v. Penick*, 443 U.S. 449, 464–465 (1979).

²³¹ See *supra* section III.

²³² See, e.g., Ex. 88, KINGS COUNTY DAIRY ELEMENT PROGRAM EIR 4.2-83 to 4.2-85, <https://perma.cc/G6NL-G256>.

dairy digester subsidies and the LCFS create in the San Joaquin Valley.²³³ Staff’s proposed Amendments and ISOR entirely ignore this information. In fact, even the “Environmental Justice” section of the ISOR fails to acknowledge the testimony, data, and facts from residents of the San Joaquin Valley about the impacts they face as a result of dairy operations, dairy expansions, and the installation and operation of digesters.

Additionally, CARB’s failure to initiate rulemaking to adopt livestock methane emission regulations in advance of adopting LCFS amendments indicates CARB’s lack of consideration for the role its policies play in causing negative and disproportionate impacts on Latino/a/e communities.

In sum, the sequence of events leading up to the release of the ISOR shows a clear pattern of CARB staff’s refusal to address or even consider the adverse and detrimental impacts of the proposed Amendments to the San Joaquin Valley and Latino/a/e communities. Staff chose instead to move forward with a policy that would perpetuate and exacerbate this harm.

(4) Departures from Normal Procedures or Substantive Conclusions

CARB staff’s actions depart from CARB’s policies on Racial Equity. On October 22, 2020, CARB adopted Resolution 20-33, alternatively entitled “A Commitment to Racial Equity and Social Justice”²³⁴ to advance racial equity and social justice. It is CARB policy to “continue identifying and implementing best practices for community engagement, especially in communities suffering environmental injustice and racial discrimination and to apply these practices throughout all of CARB’s activities.” Further, CARB committed to create an “environment in which all people feel safe, valued, acknowledged and respected.”²³⁵

In order to implement Resolution 20-33, CARB developed a “racial equity lens,” which consists of questions “for CARB staff to plan develop, and review regulations, policy documents, and informational materials and for items going before the Board” in orders to “conduct meaningful racial equity analysis.”²³⁶ According to CARB’s website, these questions assist CARB decision making by: “Describing the legal, policy, and organizational frameworks at CARB for staff to consider racial equity; Identifying the information staff should consider in assessing the equity impacts of actions and decision making at CARB; and characterizing and highlighting questions about racial equity that staff should ask and address in each step of the process.”²³⁷ This lens also requires CARB to consider alternatives with a focus on “which would do the most to address existing disparities and which might have unintended consequences.”²³⁸

²³³ See *supra* section III.

²³⁴ Ex. 89, CARB, RESOLUTION 20-33, A COMMITMENT TO RACIAL EQUITY AND SOCIAL JUSTICE (Oct. 22, 2020), <https://perma.cc/RP2X-3DND>.

²³⁵ *Id.*

²³⁶ Ex. 90, CARB, UPDATE ON CARB’S RACIAL EQUITY AND DIVERSITY EFFORTS (May 19, 2022), <https://perma.cc/8NTK-BB98> (PowerPoint presentation).

²³⁷ Ex. 91, *Model of Change*, CARB <https://perma.cc/7JHV-TKWK> (last visited Feb. 20, 2024).

²³⁸ *Id.*

In direct departure from this policy, staff's ISOR and proposed Amendments disregard racial equity and testimony of residents living in "communities suffering environmental injustice and racial discrimination." As stated above, despite consistent, sustained, and clear engaged from residents of communities near factory farm dairies, the ISOR makes not a single reference to that engagement. Residents can hardly feel "valued, acknowledged, and respected" when their sustained engagement is erased by staff from the rulemaking record. Staff's failure to follow its own community engagement best practices or apply its racial equity lens to its treatment of factory farm gas in the LCFS is evidence of intentional discrimination.

(5) Foreseeability of the Consequences of the State Action

The negative and disproportionate consequences of CARB staff's proposed Amendments are foreseeable. The current LCFS creates a disproportionate impact on Latino/a/e people and communities. CARB staff's proposed Amendments, if adopted and implemented, will continue and intensify the same series of incentives that will create disproportionate harm on the Latino/a/e communities for decades due to larger herd sizes, concentrated herds, the use of digesters, and increased transportation costs.

Considering the totality of the circumstances, CARB's actions and decisions leading up to and including the release of the proposed Amendments support a cognizable claim of intentional discrimination pursuant to federal and state civil rights law. At minimum, the above evidence of discriminatory intent bolsters the above allegations of disparate impact laid out in detail above.

2. *The proposed LCFS Amendments violate state and federal fair housing laws.*

The Federal Fair Housing Act prohibits discrimination against any person in the terms, conditions, or privileges of sale or rental of a dwelling, or in the provision of services or facilities in connection therewith, because of race, color, religion, sex, familial status, or national origin.²³⁹ Similarly, the state Fair Employment and Housing Act prohibits actions that "make unavailable or deny a dwelling based on discrimination because of race . . . or national origin."²⁴⁰ And further prohibits discrimination through "through public or private land use practices, decisions, and authorizations because of race...[or]national origin."²⁴¹

As discussed above, the Amendments, if implemented, will increase groundwater pollution, groundwater depletion, ammonia emissions, odor, flies, and air pollution in communities near dairies and the San Joaquin Valley broadly. Such impacts effectively preclude the full use and enjoyment of dwellings by impacting drinking water supplies, increasing exposure to noxious and toxic emissions, and creating a nuisance. Similarly, the proposed LCFS amendments would have probable impacts on land use decisions, including livestock operation expansions and installation of digesters which in turn will increase air and water pollution along with nuisance odors and flies the San Joaquin Valley and communities near large-scale dairy livestock operations. Accordingly,

²³⁹ 42 U.S.C. § 3604(b).

²⁴⁰ Cal. Gov. Code § 12955(k).

²⁴¹ Cal. Gov. Code § 12955(l).

the proposed Amendments will, if adopted and implemented, violate both state and federal fair housing laws.

3. *CARB's proposed Amendments are at odds with its duty to affirmatively further fair housing.*

Public agencies, including state agencies, must administer their programs and activities relating to housing and community development in a manner that affirmatively furthers fair housing. Affirmatively furthering fair housing “means taking meaningful actions that, taken together, address significant disparities in housing needs and in access to opportunity...transforming racially and ethnically concentrated areas of poverty into areas of opportunity.”²⁴²

Guidance from the state’s Housing and Community Development Department issued guidance on agencies’ duty to Affirmatively Further Fair Housing noting the expansive nature of the mandate: “Any program or activities that impact housing and community development should address the obligation to affirmatively further fair housing. Community development should be considered broadly as any processes or issues related to community members or social and physical surroundings.”²⁴³

HCD’s guidance memo goes on to identify ways in which agencies should ensure their compliance with their duty to AFFH. Potential activities include:

- **Gather and Analyze Data:** To better understand affirmatively furthering fair housing, agencies should explore available data related to the topic area to identify spatial patterns and trends and evaluate the impacts of programs and activities.
- **Engage the Community:** Proactively reach out to individuals and organizations that represent lower income households, people in protected classes, and households with special needs to develop open and mutual communication. Solicit input and communicate on a regular and ongoing basis, not just during formal public comment periods.
- **Assess Programs and Activities:** Inventory programs and activities and explore opportunities to affirmatively further fair housing.

The proposed amendments will exacerbate economic and environmental obstacles to opportunity in lower income communities and people and communities of color in the San Joaquin Valley. The proposed Amendments, if adopted and implemented, would increase exposure to ammonia in communities near large dairies, increase PM2.5 and ozone in an already compromised San Joaquin Valley, increase nitrate contamination of drinking water, increase odors inside and outside homes, and deplete groundwater in already over drafted aquifers. All of these impacts negatively impact access to opportunity in lower income communities of color in violation of CARB’s duty to Affirmatively Further Fair Housing. Furthermore, CARB’s failure to consider the significant and disproportionate impacts, especially in light of the numerous comments the agency has received highlighting these impacts, constitutes a further violation of their duty to affirmatively

²⁴² Cal. Gov. Code § 8899.50.

²⁴³ Ex. 92, CAL. DEP’T. OF HOUSING AND COMMUNITY DEV., AFFIRMATIVELY FURTHERING FAIR HOUSING (updated Apr. 2021), <https://perma.cc/XQ8Y-B3J8>.

further fair housing. CARB appeared to neither gather and analyze data regarding the impacts of the LCFS on lower income communities of color in the San Joaquin Valley, nor meaningfully engage community members as evidenced by a complete erasure of concerns raised throughout the LCFS rulemaking process, nor assess opportunities to affirmatively further fair housing through the LCFS.

Additionally, the proposed Amendments will have a significant impact on gas prices, a cost that will be borne disproportionately by Latino and Black people and communities and lower income people and communities, especially communities that have limited access to transit. Increasing costs for Latino and Black people and communities, lower income people, lower income communities, and communities without reliable transit has a direct and negative impact on access to opportunity. Accordingly, CARB's failure to address increased and disproportionate costs of the program for lower income households and communities, people and communities of color, and communities without adequate transit options is directly at odds with CARB's duty to affirmatively further fair housing.

4. *The proposed Amendments violate CARB's AB 32 duty to prevent disproportionate impacts on lower income people.*

According to Assembly Bill 32 (2006) CARB must "ensure that activities undertaken to comply with the regulations do not disproportionately impact low-income communities."²⁴⁴ As stated above, the current LCFS and staff's proposed amendments operate in a manner that disproportionately impacts low-income communities with increased pollution and increased transportation costs. The proposed Amendments will, if adopted, violate AB 32's requirement to prevent disproportionate impacts on lower income communities.

V. CONCLUSION

For the foregoing reasons, and in the foregoing ways, CARB must update the proposed Amendments to comply with its legal obligations and reform the LCFS. To do otherwise would be arbitrary, capricious, and indefensible.

Respectfully submitted February 20, 2023

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²⁴⁴ Cal. Health & Safety Code § 38562(b)(2).

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