June 25, 2020

California Air Resources Board
1001 I Street,
Sacramento, CA 95814

Re: Tier 2 Pathway Application: Application No. B0089; Gallo Cattle Company and Cottonwood Dairy

To Whom It May Concern,

Association of Irritated Residents, Central California Asthma Collaborative, Food and Water Watch, and Leadership Counsel for Justice and Accountability write in opposition to the dairy waste to energy project proposed by Gallo Cattle Company for California Dairy Manure Biogas to Low-CI Electricity for four primary reasons: (1) information and data included in the application and relied upon for approval is redacted such that an independent review of the proponent's claims and the accuracy of calculations and impacts is impossible, (2) the project will increase air pollution and threatens water quality in the locality and region, thus undermining the state's climate, environmental justice, and equity goals, (3) it appears that the GHG calculations ignore the GHG emissions from the production and management of methane on dairies, and (4) this project will actually incentivize the production of methane.

<u>Lack of Available Information and Data Transparency</u>

The applicants and/or the California Air Resources Control Board (CARB) withheld and redacted information regarding both dairy operations (including herd size and amount of manure managed) and energy generation (including biogas conditioning and kilowatts produced) such that it is impossible to determine both the air quality and water quality impacts that the project will produce, as well as the energy conversion and energy

production rates which, along with information regarding dairy operations, is necessary to assess the veracity of the claimed project benefits and the carbon intensity value. In short, based on the public's review of the available documents, there is no way to comment in any informed way on the proposed project or assess the accuracy and value of the justification presented. In the CA-GREET3.0 Model in Support of Application there are more than 100 critical data entries (a majority) that are labeled "confidential".

The exclusion of this information defeats the most important aspect of opening a proposed certification for public comment. CARB's regulation on the Tier 2 Fuel Pathway Application Requirements and Certification Process specifically and distinctly separates comments related to factual and methodological errors from other comments and denotes them as the most important. It does this by declaring that "[o]nly comments related to potential factual or methodological errors will require responses from the fuel pathway applicant." Cal. Code Regs. tit. 17, § 95488.7(d)(5)(A) (2020). Without access to the data underlying the calculations, it is impossible for commenters to accurately assess the facts and methodology relied on by the applicant. Therefore, no access to information means no proper review by commenters, and thus the most important aspect of public comment is rendered impossible.

The materials available for review also leave out critical information regarding the demand for biogas for vehicles and fail to take into consideration clean, renewable energy sources. Additionally, the applicants and/or CARB withheld the following information, alleging that they contain confidential business information: Attestation Letter, Utilities Invoices and Electricity Bills, Facility Process Flow Diagram, and Monthly Data and Calculation for GREET Input Values.

Without access to data critical to allow an independent analysis of truly monumental carbon intensity values or environmental and ecological impacts of the proposed project, the application must not be approved.

Air and Water Quality Impacts

This project will threaten environmental degradation in the local community and throughout the region by increasing air pollution and groundwater contamination. This project, by generating and then combusting methane to produce electricity will create NOx. Furthermore, due to the lack of information in the application and supporting paperwork, it is impossible to understand the scope and severity of the air quality impacts of this project. NOx is key to ozone formation in the warm months and similarly catalytic in the formation of PM2.5 in the cooler months.

Reducing NOx emissions in the San Joaquin Valley is key to the Valley reaching compliance with the federal clean air standards and protecting the health of the region. Additionally, studies find that manure exiting a digester emits as much as 81% more ammonia than raw manure.[1] Increased

[1] Michael A. Holly et al, *Greenhouse Gas and Ammonia Emissions from Digested and Separated Dairy Manure During Storage and After Land Application*, 239 AGRICULTURE, ECOSYSTEMS & ENV. 410 (Feb. 2017), https://www.sciencedirect.com/science/article/pii/S0167880917300701.

ammonia together with increases in NOx creates an even more intensive ammonium nitrate PM 2.5 impact.

This project proposes to combust biogas in an internal combustion engine for on-site electricity generation, which yields significant criteria pollutants that negatively affect air quality.[2] If combusted on-site to produce electricity, biogas is more than 20 times more polluting than a modern, natural gas combined cycle power plant.[3] Thus, this electricity should not be used to power electric vehicles as a "clean" source of energy when combusting such biogas seriously degrades air quality in the Valley both individually and cumulatively with other on-site digester engines.

The current permitting of digesters by the San Joaquin Valley Unified Air Pollution Control District demonstrates this air pollution impact. For example, a single dairy biogas project – Lakeview Dairy – with two internal combustion engines burning biogas to produce 1,059 kw of electricity emits air pollution.[4] One can reasonably extrapolate the impact from 25 such biogas projects each emitting approximately 5.68 tons per year of ozone-forming oxides of nitrogen (NOx). Considering the proposed Avenal Power Center's 600 megawatt Natural Gas Combined Cycle power plant maximum NOx emissions of 99.4 tons/year,[5] the dairies would generate 4.41 percent of the electricity Avenal generates yet emit more NOx, as well as more sulfur oxides and volatile organic compounds.[6] This adds air pollution to the air basin, would displace cleaner power with dirty "renewable" dairy biogas, and negatively affect San Joaquin Valley communities.

The handling of the digestate is not addressed. It is stated the digestate goes into storage lagoons and is eventually used for fertilization of crops via irrigation. Are these storage lagoons ever aerated with the floating paddle machines seen on many manure lagoons? The emissions from any digestate ponds and any other liquified manure ponds must be fully disclosed and considered. This includes all ammonia emissions, methane emissions, and nitrous oxide emissions (N2O). Any GHG emissions from these ponds must be calculated and applied to increase the carbon intensity calculations.

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[2] Using current technology for biogas electricity generation results in a net increase of criteria pollutants. *See* Assessment of the Emissions and Energy Impacts of Biomass and Biogas Use in California at 10 (2015) ("Biogas Impact Assessment"), https://ww3.arb.ca.gov/research/apr/past/11-307.pdf

[3] Assembly Budget Subcommittee No. 4, Resources and Transportation, Agenda, April 19, 2017 at 17, attached as Exhibit 1.

[4] Notice of Preliminary Decision – Authority to Construct, Lakeview Dairy Biogas at 1, 20, excerpts attached as Exhibit 2.

[5] Notice of Final Determination of Compliance, Avenal Power Center at 3, 27, attached as Exhibit 3.

[6] Biogas/Avenal Comparison, attached as Exhibit 4.

(photo below from the application shows large and small ponds near the covered lagoon)

Flaring is not discussed adequately. How much annual flaring is expected and what are the expected GHG and air quality emissions? Why is the flare not required to be enclosed to maximize emission reductions? How do carbon intensity calculations take flaring into consideration? These questions are left unanswered, making it impossible for the public to adequately assess this application and comment on the applicant's project's impacts on local air quality and community well-being. Furthermore, avoiding the liquification of the manure at these dairies in the first place would avoid most of the methane emissions the applicant purports to be capturing and would also avoid the need for flaring.

This project conflicts with the language of AB32—which, in summary, says that efforts to reduce GHG emissions should not compromise or conflict with efforts to reduce air pollution—because it will worsen local air quality in an area already struggling with poor air quality that disproportionately burdens certain communities. Additionally, this project and similar projects undermine the state's efforts to make truly clean, zero emissions electricity available to the public. We have access – and can increase access – to zero emission electricity sources, including wind and solar. There is simply no need to generate polluting electricity when other options are available and expanding.

Large scale dairies are a primary contributor to groundwater pollution, causing drinking water contamination. This is a crisis communities throughout the Central Valley are facing. Cow manure, and in particular liquefied manure applied to cropland, contributes a majority of the nitrate contamination in groundwater under and around dairies, which impacts the health and economic well-being of residents and communities in nearby towns and cities. Digesters encourage both the production of more manure and practices to facilitate digester efficiency to maximize methane collection. Digesters, like the digester at issue in this application, rely on manufactured, liquefied manure that is so deleterious to the environment and nearby communities to generate profits through energy production. To what extent will this project exacerbate the degradation of already very polluted water?

Accordingly, this project threatens the local community and the region by increasing air pollution and groundwater contamination. Due to the redacted information, it is impossible to know the extent of these harms. Regardless, it is imperative that these harms be factored more directly into the analysis of this pathway, and they are sufficient to reject this project. This project will increase NOx, ammonia, and PM 2.5. It will also increase groundwater contamination. Additionally, the lack of information about flaring makes a complete analysis of its harms impossible and the project is not taking simple, common sense steps such as enclosing the flare to reduce emissions. Moreover, all of these harms are gratuitous and conflict with AB 32. Rather than fund projects that will cause air pollution, funds should go to zero emission sources such as wind and solar for electric power. In conclusion, this project harms the local community's air and water and should not be approved because other projects that do not cause those harms exist and should be incentivized to the fullest extent possible.

Incomplete GHG Analysis

Similarly, the calculation of GHG emissions and alleged reductions ignore the GHG emissions of the dairy as a whole. The GHG emissions from the dairy —including methane released from manure, enteric emissions, and other dairy operations—are not regulated. Therefore, these emissions must be calculated and applied to the lifecycle GHG analysis for this project. The Well-To-Tank fuel cycle analysis begins only at the point of capturing the methane. It must begin instead with all inputs for operation of the dairy.

Manure is neither a waste product nor an inevitably. The assumption in this application and analysis erroneously assumes both. Carbon intensity calculations in the application begin with the wastewater - and, moreover the immense quantity of the wastewater - as if it came out of nowhere and its existence represents the unavoidable status quo. This assumption creates a false reality wherein off-gassing from massive amounts of liquified manure is the only alternative to digestion. An operator who deliberately creates a problem should not then benefit for mitigating a portion of the harmful effects caused by that original sin.

Manure can be valuable; it is not a waste product. The nutrients in manure such as nitrogen and potassium, plus the carbon and fiber, are all valuable and necessary in the production of agricultural crops and must be recycled and responsibly managed if we are to have a zero-carbon energy future. These nutrients are purchased - often imported - and used by the agricultural industry in large quantities. Therefore, it is incorrect to call this manure a waste product and consequently avoid looking at the inputs from its production. The carbon intensity calculations for the biogas must include the required full life-cycle assessment analysis as required under the Low Carbon Fuel Standard.

As discussed throughout these comments, the application does not provide an adequate description of GHG emission reductions as it fails to include critical data, and fails to consider the full scope of GHG emissions related to biogas production and distribution.

Incentivized Production of Methane

This project and similar projects do not just undermine California's climate and environmental justice goals, but actually incentivize increased production of methane (and the concomitant pollution that accompanies methane production). To the extent that dairies are making manure and waste management decisions to increase methane production – such as increasing herd size to increase manure production, opting out of solid separation to increase methane, taking in food wastes for digestion, and even opting for liquefied manure-management instead of methods that prevent production of methane in the first place – **Gallo Cattle Company and the Cottonwood Dairy** should not reap the benefits of the LFCS program, designed to reduce greenhouse gases, because this project instead incentivizes the production thereof.

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In conclusion, this project should be denied because it will harm local air quality, threaten water quality, and fails to consider the full lifecycle emissions of methane production from dairies. Any community benefit falsely claimed by this project is more than offset by local negative impacts to environmental justice communities near this project. Furthermore, there is inadequate data to determine the extent to which the project will reduce greenhouse gas emissions and fails to take into consideration how the project will incentivize production and emission of greenhouse gases. Unless and until there is publicly available and verifiable data demonstrating that this project will not produce negative local air and water impacts, and the extent to which this project will actually reduce greenhouse gas emissions that could not otherwise be reduced, CARB must deny this application.

Sincerely,

Julia Jordan, Leadership Counsel for Justice and Accountability
Tom Frantz, Association of Irritated Residents
Kevin Hamilton, Central California Asthma Collaborative
Tyler Lobdell, Food and Water Watch
Nayamin Martinez, Central California Environmental Justice Network
Caroline Farrell, Center on Race, Poverty, and the Environment
Brent Newell, Public Justice